

TECHNOLOGY

REVIEW

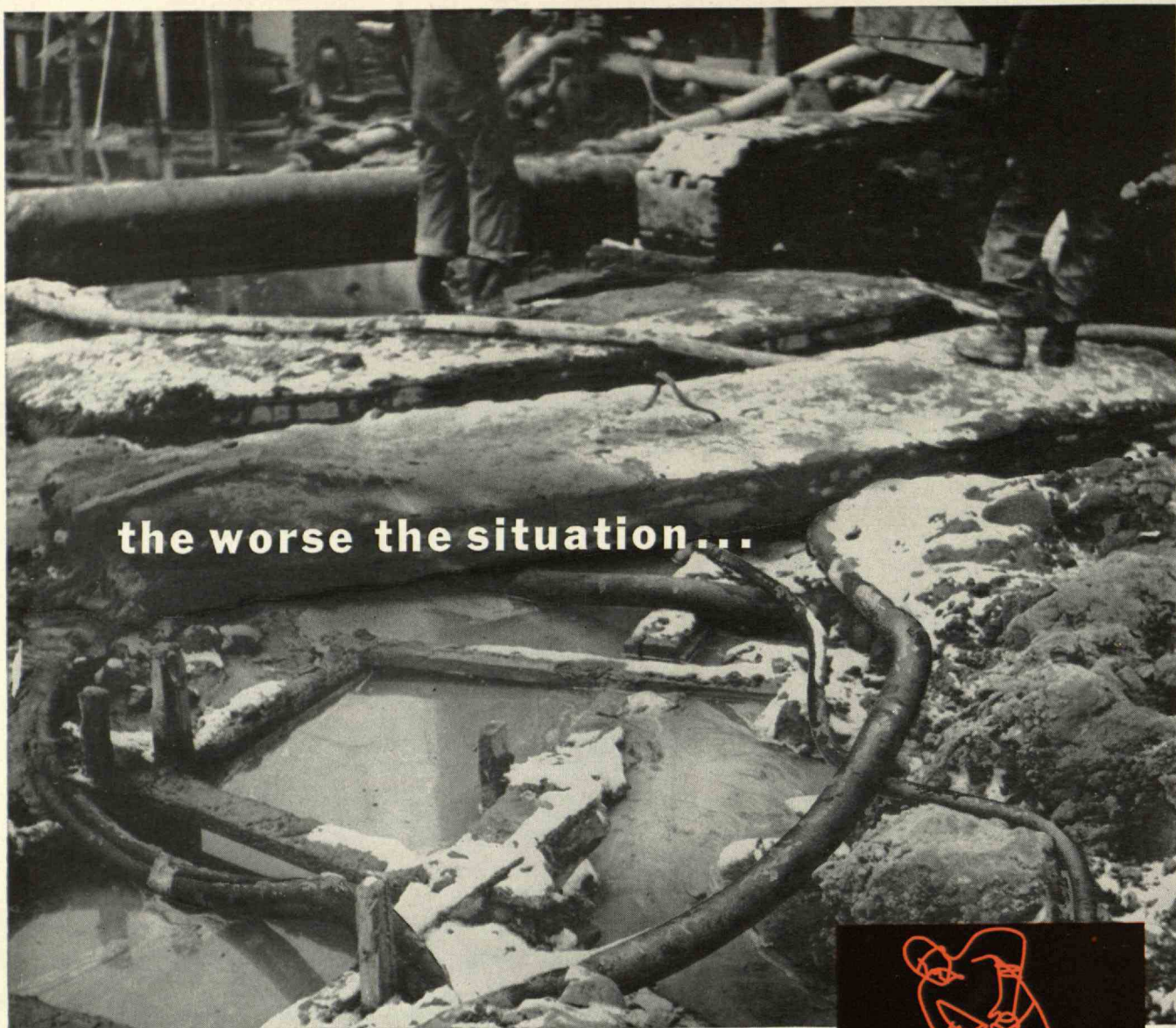
December 1958



technology review

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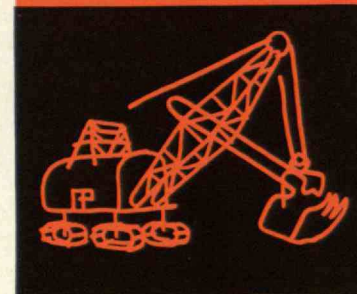
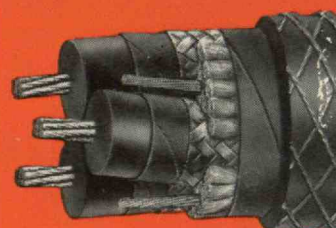
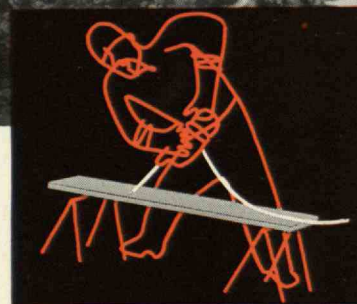


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Stratton Elected President of M.I.T.

Killian Becomes Chairman of Corporation

Bush Takes New Post as Honorary Chairman

ACTING on the recommendation of James R. Killian, Jr., President of the Massachusetts Institute of Technology since 1948, the M.I.T. Corporation appointed Julius A. Stratton, now Chancellor and Acting President, to be the next President of the Institute, effective January 1, 1959.

Dr. Killian, who continues on leave as Special Assistant to President Eisenhower, was at the same time elected Chairman of the Corporation, a post to which he will devote full time when he returns in the future from his service in Washington.

Vannevar Bush, who has served as Chairman of the Corporation for the past two years, was elected Honorary Chairman of the Corporation.

The elections, confirming recommendations presented by its Executive Committee, were made at the regular meeting of the Corporation on December 1, and announced at a special convocation of the Faculty following the meeting of the Corporation.

In commenting on Dr. Stratton's appointment as President and Dr. Killian's election as Chairman of the Corporation, Dr. Bush said:

"Last October Dr. Killian suggested to the Corporation, as he had earlier done to members of its Executive Committee, that because of his continuing leave status and other considerations he wished to relinquish the Presidency of the Institute whenever a successor could be appointed. The Corporation, in response, indicated its conviction that the Institute now has indispensable need for two full-time senior officers, the Chairman of the Corporation and the President as Chief Executive Officer. The Corporation also suggested that it proceed to appoint a new President and that when Dr. Killian returned from his leave in Washington he come back as full-time Chairman of the Corporation, a post that would enable him to concentrate on those aspects of the Institute's program that look outward rather than inward and that would be concerned with the over-all trustee policy and to share with the President the formulation of institutional goals.

"In seeking a new President of the Institute, the Corporation and its Executive Committee consulted with senior representatives of the Faculty and of the Alumni Association. We came enthusiastically and unanimously to the conclusion that Dr. Stratton was superbly qualified to succeed Dr. Killian as President, that he would have the enthusiastic support of the M.I.T. community, and that the Institute would be fortunate if Dr. Stratton would accept an invitation to serve as President. I am very happy that he has accepted the appointment.

"The Corporation, in electing Dr. Killian as Chairman, granted him leave of absence in this new post

in recognition of his continuing important responsibilities in Washington, but in so doing, reaffirmed the urgent need for Dr. Killian to return to the Institute in order to assume his new duties full time at the earliest appropriate date."

In commenting on Dr. Stratton's election to the Presidency of the Institute, Dr. Killian said:

"Dr. Stratton's election recognizes his immense contributions to M.I.T. and his leadership in science and education, both at M.I.T. and nationally. He possesses to an extraordinary degree those qualities of mind, and character, and spirit, which are required for an outstanding academic administrator and specifically for the Presidency of M.I.T.

"Dr. Stratton and I have long worked together with a sense of common purpose and extraordinary concert on policy. In this fortunate fact lies the best assurance that the new administrative arrangements will work happily and well. One of the principal responsibilities of a chief executive is to set the stage for succession, to insure future leadership of the highest possible caliber for the institution. I am happy and confident that this has been done.

"I am confident of his success as President and of the loyal support of his colleagues, as I am grateful to him and to them for their generous cooperation with me during the eighteen years that I have carried major responsibilities in connection with the M.I.T. President's Office, ten of them as President.

"For some months it has been my plan and conviction that, if agreeable, I would like, at an appropriate time, to shift to the Chairmanship of the Corporation, following the precedent of Dr. Karl Taylor Compton, who became Chairman when he went to Washington in 1948 as Chairman of the Research and Development Board of the Department of Defense, and I became President. My continuance on a leave status, and the availability of Dr. Stratton, make this change appropriate now and assure that there be no loss of momentum in the administration of the Institute because of my leave.

"As Chairman of the Corporation I can serve the Institute in a way that will draw most effectively on my experience and afford me special opportunities to do all within my power further to promote the usefulness of this institution, especially to help secure for it those additional resources and facilities its great and growing responsibilities so urgently require."

Dr. Killian's present assignment is one of international significance and is bound to have beneficial effect when he returns to the Institute.

Dr. Stratton has the Review's best wishes, wholehearted cooperation, and sympathetic understanding as he becomes the eleventh President of M.I.T.



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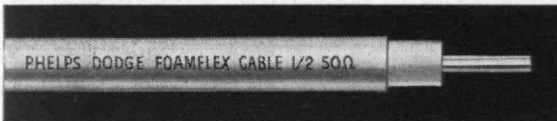
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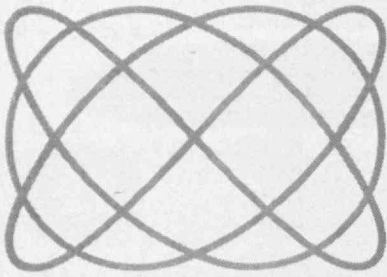
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Learning by Doing.—A co-operative program for leading students in geophysics is described (page 83) by ROBERT R. SHROCK, Head of the Institute's Department of Geology and Geophysics. This program, initiated in 1951 by Professor Shrock and Cecil H. Green, '23, is a modern example of the William Barton Rogers' philosophy of combining theoretical studies with practical application. During the first summer program managed by Geophysical Service, Inc., all students came from M.I.T. However, the co-operative program proved to be so successful that other colleges clamored for opportunity to participate, and nationwide support came from other firms engaged in geophysics or related activities.

A native of Indiana, Professor Shrock received the A.B., A.M., and Ph.D. degrees in geology from the University of Indiana in 1925, 1926, and 1928, respectively. He taught at the University of Wisconsin from 1928 until 1937 when he joined the M.I.T. Faculty as assistant professor. He became associate professor in 1943, was promoted to full professor in 1949, and that year became head of the Department of Geology. He is consultant for various mining, petroleum, and engineering companies, museums, and state geological surveys. He conducted important geological field studies in Haiti, the Dominican Republic, Cuba, Jamaica, and Mexico, as well as in the United States. Dr. Shrock is also widely known for his contributions to the literature of geology. He is author of many technical papers and books, including *Invertebrate Paleontology* (with William H. Twenhofel), *Index Fossils of North America* (with Hervey W. Shimer), and *Sequence in Layered Rocks*.

Professor Shrock gives much credit for the establishment of the co-operative course for geophysicists to Dr. Green. Dr. Green is a graduate of the Institute's Co-operative Course in the Department of Electrical Engineering. He is president of Geophysical Service, Inc., a director of Texas Instruments, Inc., and is a special term member of the M.I.T. Corporation.

Life Is Colorful.—Whether the observed coloration is due to the scattering or interference of light, or whether it is attributable to pigments within the living substance, color plays a persistent and important role in nature. In fact, as FREDERIC W. NORDSIEK, '31, notes in "Life Is Colorful" (page 89) nowhere else do beauty and utility so closely intermingle as in the colors of the living world, and without its myriad colors, life would not be merely dull—it would be impossible. If the green of chlorophyll is the characteristic color of the plant world, then the red of hemoglobin is the primary color of the animal world; for all of the vertebrates—and many lower animals—have blood containing the red pigment of hemoglobin, although a few sea animals are "blue bloods." In many cases, the protective coloring of animals may be a lifesaver in making them inconspicuous to their enemies; in other instances, however, colors and their patterns play a significant role in courtship, and hence in survival of the species.

A native of New York Mr. Nordsiek received the S.B. degree in Biology and Public Health from M.I.T. in 1931. Since then he has had wide experience in research and administration in the food industry and in public health activities. From 1943 to 1951, he was assistant director, Research Service Department of Standard Brands, Inc. Since 1951 he has been associated with the American

(Concluded on page 70)

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THE TABULAR VIEW (Concluded from page 68)

Cancer Society. His work deals with organizing and administering research grants programs.

Mr. Nordsiek has been an editorial associate of The Review since 1944, for which he has written more than 100 feature articles and unsigned shorter pieces. In addition, articles by him have appeared in such publications as *Encyclopaedia Britannica* year books, *Encyclopedia Americana*, *Science Digest*, *American Journal of Public Health*, *Appalachia*, *Nature Magazine*, and *Food Engineering*.

Conquest of Typhus Fever.—From time to time in past issues of The Review, JAMES A. TOBEY, '15, has discussed the role which various diseases and epidemics have played in changing the course of history. Dr. Tobey's discussion in this issue (page 93) deals with the conquest of typhus fever. Of particular significance to Review readers is his mention of the serious epidemic of typhus fever which raged in Serbia in 1915, and which was finally brought under control through efforts of the American Red Cross Sanitary Commission to Serbia. More than half of the members of this Commission were Technology Alumni who had either studied bacteriology or sanitary engineering at the Institute, or had been graduated from the Harvard-Technology School for Health Officers. Among the members of this Commission was Dr. Stanley H. Osborn, '15, through whose co-operation The Review is happy to be able to publish the illustration of the members of this Commission as they were about to leave New York.

A native of Quincy, Mass., Dr. Tobey attended Roxbury Latin School, and came to M.I.T. where he received the S.B. degree in 1916. He received an LL.B. degree from Washington Law School in 1922, an M.S. from American University in 1923, the Dr. P.H. degree from M.I.T. in 1927, and the LL.D. from Southeastern University in 1938. His professional life has been spent in advancing public health and laws affecting it. He has lectured at M.I.T., Yale, Harvard, and Columbia, and has served in the Army's Medical Service. Colonel Tobey has written more than 100 articles, about 20 pamphlets, many books, and numerous Review articles.

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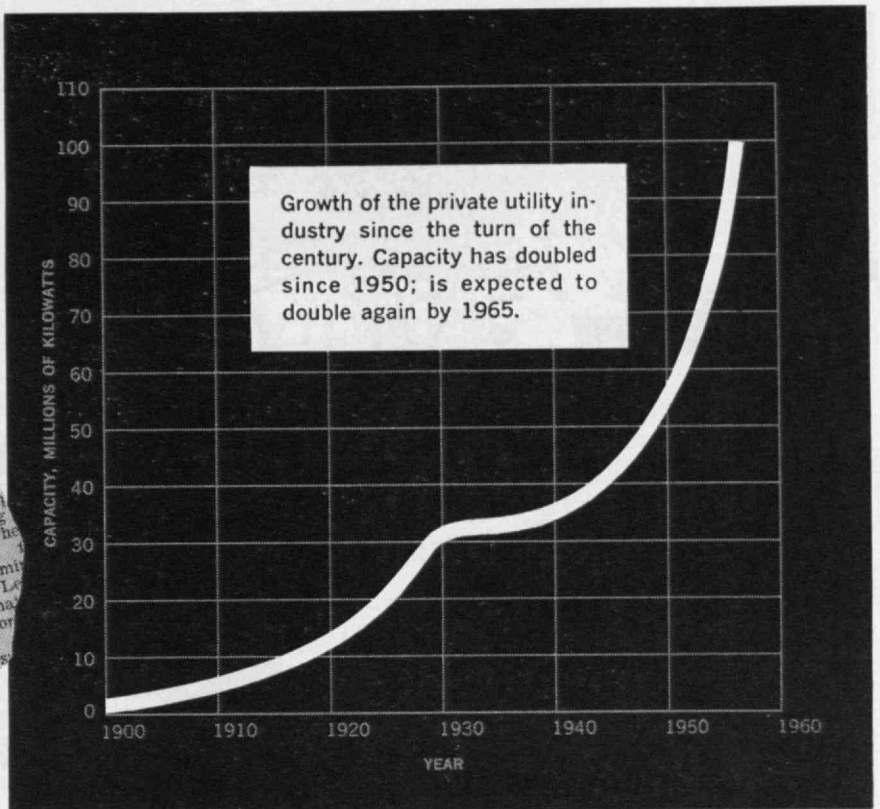
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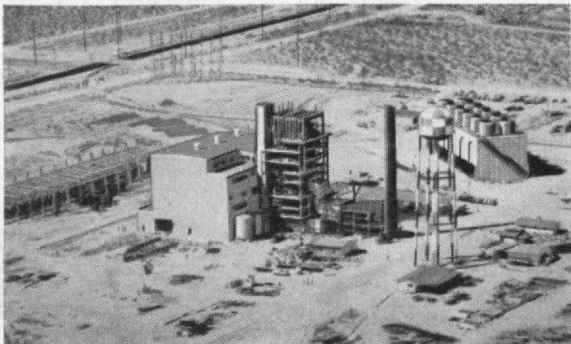
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THE TECHNOLOGY REVIEW

THE TECHNOLOGY REVIEW

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CONTENTS for DECEMBER, 1958 Vol. 61, No. 2

CHURCH OF THE RANCHOS DE TAOS Front Cover

Photograph by Ward Allan Howe

MODERN SYMBOL — T.W.A. SERVICE BUILDING Frontispiece 74

Photograph by F. S. Lincoln

A CO-OPERATIVE PROGRAM FOR GEOPHYSICISTS
By Robert R. Shrock 83

A program, initiated in 1951, to allow students with a bent for geology to learn by doing has received nationwide support of the industry and interest by colleges in all parts of the country

LIFE IS COLORFUL By Frederic W. Nordsiek 89

Whether due to pigments or to scattering or interference of light, color in living things plays an important role in preservation and reproduction of the species

THE MUCH DREADED RED CLOAK
By James A. Tobey 93

In the conquest of typhus fever, an important role was played by the American Red Cross Sanitary Commission to Serbia, whose 26 members included 16 trained at M.I.T.

THE TABULAR VIEW 68

Contributors and contributions to this issue

THE TREND OF AFFAIRS 75

Relating to the Massachusetts Institute of Technology



New England Scene

Although made in Sudbury, Mass., this photograph by Raymond E. Hanson reflects the yearning for peace that traditionally marks the Christmas season.

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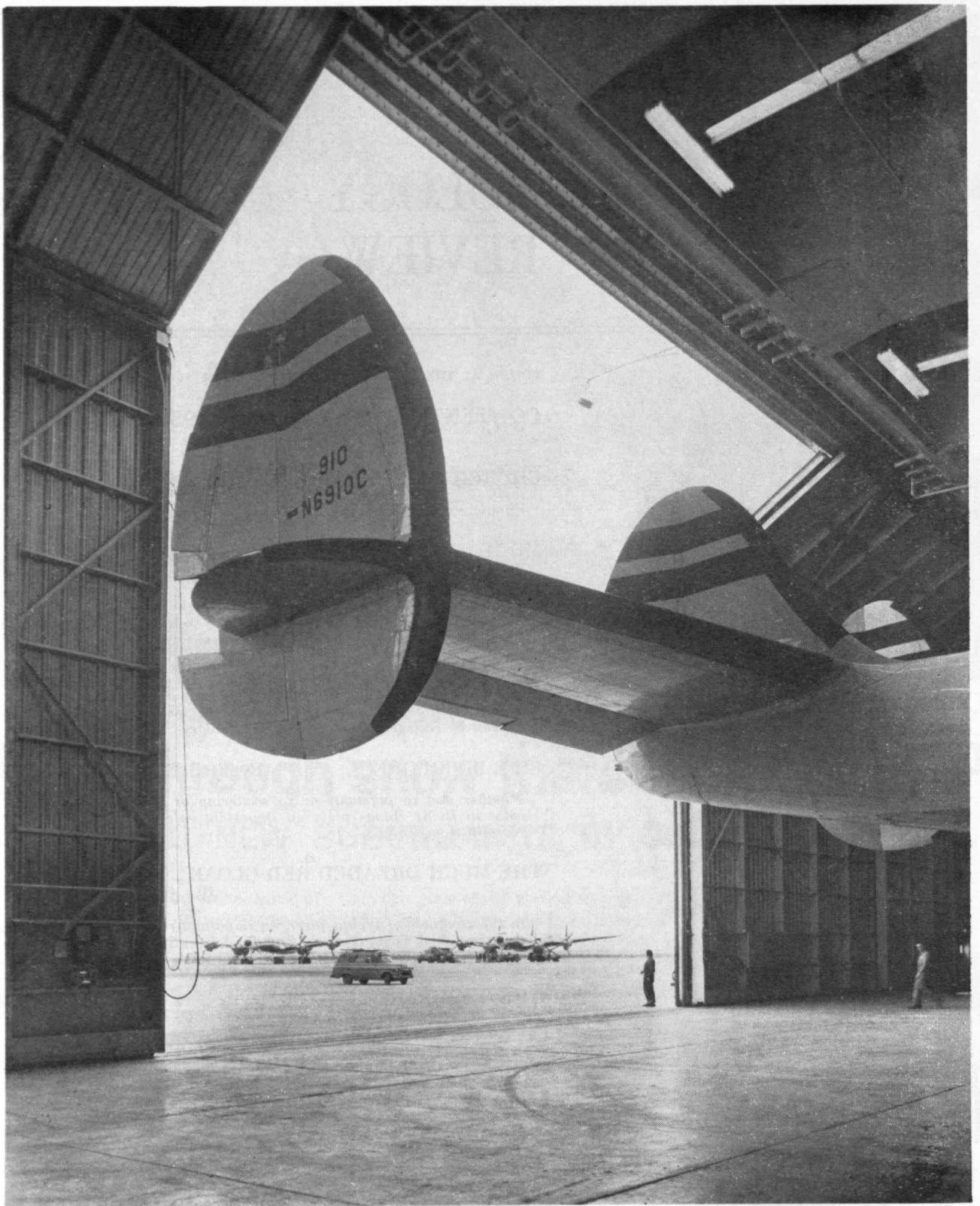
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Modern Symbol

Photographed by F. S. Lincoln, '22, in the T.W.A. Service Building of New York's Idlewild Airport, this scene of tail section of modern air transport is symbolic of man's desire to travel ever more swiftly.



The Trend of Affairs

Shannon Appointed Donner Professor

■ Appointment of Claude E. Shannon, '40, leading scientist and pioneer in the development of information theory, to the recently established Donner Chair of Science at the Institute was announced recently by J. A. Stratton, '23, Acting President.

As reported under the title "Grant for Chair in Physical Science" (page 469, July, 1958, Technology Review), the new professorship was made possible by a \$500,000 grant from the Donner Foundation of Philadelphia, the largest ever received by M.I.T. for endowment of an academic chair.

The 42-year-old native of Gaylord, Mich., received his undergraduate degree at the University of Michigan in 1936, and was awarded an S.M. in Electrical Engineering and a Ph.D. in Mathematics from M.I.T. in 1940. In 1941 he became a research mathematician with the Bell Telephone Laboratories in Murray Hill, N.J., specializing in research on communication theory and computing machines and automata.

In January, 1956, Dr. Shannon was granted a leave of absence from the Bell Telephone Laboratories and returned to M.I.T. as a visiting professor of electrical communications. In 1957 he joined the Institute Faculty as a permanent member, with the dual title of professor of communications sciences in the Department of Electrical Engineering and professor of mathematics.

The field in which the newly honored professor has achieved special eminence is that of information theory, a branch of science which combines methods of mathematics and electrical communications in computing, automation, and areas of the behavioral sciences that bear on the relation of man to his environment. Dr. Shannon's work in this field has had practical applications in automatic telephone systems, and improved systems by which information is coded for transmission.

Among honors that have been received by Dr. Shannon are the Alfred Noble Prize of the American Institute of Electrical Engineers, the Morris Liebmann Award of the Institute of Radio Engineers, the Stuart Ballantine Medal of the Franklin Institute, and the Research Corporation Award.

Report of the Treasurer

■ The major trends and developments in Institute financial affairs for the fiscal year 1957-1958 are summarized below by Joseph J. Snyder, '44, Treasurer:

	1957-58	1956-57	Change
Academic operations	\$20,905,000	\$19,489,000	+ \$1,416,000
Division of Sponsored Research	54,344,000	49,118,000	+ 5,226,000
Total funds	91,773,000	87,471,000	+ 4,302,000
Plant assets	43,251,000	41,309,000	+ 1,942,000
Gifts and grants	7,732,000	8,498,000	- 766,000
Investments — market value	132,150,000	128,086,000	+ 4,064,000
Investments — book value	89,267,000	85,314,000	+ 3,953,000

Operations

The operations of the Institute in 1957-1958 are set out in the following exhibit:

Revenues and funds	1957-58	1956-57
Tuition and other income	\$ 6,485,000	\$ 6,458,000
Investment income	1,913,000	1,793,000
Gifts and other receipts	4,481,000	4,215,000
Contract allowances for indirect expenses	6,211,000	5,230,000
Auxiliary activities	1,815,000	1,793,000
Total	\$20,905,000	\$19,489,000
Expenses		
Academic	\$ 8,718,000	\$ 8,116,000
General and administration	7,149,000	6,272,000
Plant operations	3,210,000	3,136,000
Auxiliary activities	1,828,000	1,965,000
Total	\$20,905,000	\$19,489,000

The growth in academic expenses was financed in part by a special distribution of investment income and a further increase in the use of gifts and other receipts for current purposes. Contract allowances for indirect expenses on sponsored research were higher in 1957-1958, in keeping with the increase in general and administration expenses including salary and wage adjustments and employee benefits. In 1957-1958 the volume of sponsored research was 12 per cent above the preceding year.

Gifts

The gifts for 1957-1958 are compared to 1956-1957 in this table.

	1957-58	1956-57
Gifts for endowment	\$1,138,000	\$2,381,000
Gifts for buildings	195,000	731,000
Gifts for current use — invested	1,987,000	1,330,000
Industrial Liaison support	1,188,000	1,293,000
Other funds for current use	3,224,000	2,763,000
Total gifts	\$7,732,000	\$8,498,000

Endowment gifts received in 1957-1958 included \$200,000 from the estates of Frank Hanchett and Hazel Hanchett Harvey for the Walter R. Hanchett ['15] Fund, \$216,000 from the estate of F. Estelle Mosman, \$178,000 from the estate of Philip A. Mosman, '87, \$145,000 for the Archer E. Wheeler ['95] Scholarship Fund, and \$100,000 from the Donner Foundation as the first receipt for an endowed professorship. Gifts directly to the Alumni Fund of \$436,590 are included in gifts for current use — invested, and made up a part of the total credited by the Alumni Fund Office. Contributions for the Faculty Salary Adjustment Fund of \$1,256,000 were received during 1957-1958 and served to increase the gifts for current use — invested over 1956-1957.

Funds

Endowment and other funds increased by \$4,302,000 during 1957-1958:

	1957-58	1956-57
Endowment for general purposes	\$36,162,000	\$34,902,000
Endowment for designated purposes	20,768,000	19,882,000
Total endowment funds	\$56,930,000	\$54,784,000
Other funds	34,843,000	32,687,000
Total funds	\$91,773,000	\$87,471,000

New endowment resources were added during the year for Faculty salaries, for the academic departments, for undergraduate scholarships, and for plant operations. Increases were recorded in funds for the Faculty Salary Adjustment Fund, for new Faculty appointments, and for the funding of Faculty tenure salaries and related expenses now met with other resources.

Plant Facilities

The nuclear reactor was largely completed during the year, and construction progress at the David Flett du Pont Athletic Center brought the book value of the educational plant of the Institute to \$43,251,000 on June 30, 1958, compared to \$41,309,000 on June 30, 1957.

Investments

The investment position of the Institute on June 30, 1958, and June 30, 1957, is presented in the following table, which is exclusive of the investments

of the M.I.T. Pension Association and the Supplementary Retirement Plan:

	June 30, 1958		June 30, 1957	
	Book Value	Market Value	Book Value	Market Value
General investments				
Bonds	\$43,759,000	\$ 43,869,000	\$42,550,000	\$ 39,957,000
Stocks	24,054,000	63,754,000	22,122,000	64,049,000
Real estate	12,087,000	12,087,000	11,863,000	11,863,000
Commercial paper	2,471,000	2,471,000	2,208,000	2,208,000
Total	\$82,371,000	\$122,181,000	\$78,743,000	\$118,077,000
Special investments	4,766,000	7,839,000	4,791,000	8,229,000
Student notes receivable	2,130,000	2,130,000	1,780,000	1,780,000
Total	\$89,267,000	\$132,150,000	\$85,314,000	\$128,086,000

Funds sharing in the income from the general investments earned 6.2 per cent on the average book value compared to 6.14 per cent last year. This year 5 per cent plus a special distribution from accumulated investment income of 1/2 of 1 per cent was allocated to the funds. The total income on the general and special investments in 1957-1958 was \$4,548,000, compared to \$4,263,000 in 1956-1957.

The proportion of the general investments in bonds at market value was 33.8 per cent on June 30, 1957, and 35.9 per cent on June 30, 1958. The proportion of investment income from bonds increased from 30.1 per cent to 33.9 per cent. At market values the proportion of the general investments in common stocks decreased from 53.7 per cent on June 30, 1957, to 51.3 per cent on June 30, 1958. Investment income represented by common stock dividends declined from 57.0 per cent in 1956-1957 to 54.2 per cent in 1957-1958.

The investments of the M.I.T. Pension Association and the Supplementary Retirement Fund on June 30, 1958, and June 30, 1957, are presented in the following exhibit:

	June 30, 1958		June 30, 1957	
	Book Value	Market Value	Book Value	Market Value
Pension Association	\$ 8,390,000	\$11,250,000	\$7,260,000	\$ 9,800,000
Supplementary Retirement Fund	2,667,000	2,827,000	1,545,000	1,606,000
Total	\$11,057,000	\$14,077,000	\$8,805,000	\$11,406,000

General

The increase in the funds of the Institute of \$4,302,000 in 1957-1958 compares with \$4,792,000 in 1956-1957, when a substantial endowment gift was received. The increase in endowment was \$2,146,000 in 1957-1958 in contrast to \$3,700,000 in 1956-1957.

Student loans outstanding expanded further during the year to \$2,130,000 on June 30, 1958, compared to \$1,780,000 on June 30, 1957, and \$787,000 five years ago. As tuition has increased, the loan funds of M.I.T. have become a more important source of financing for students at the Institute.

Weber Becomes Army Consultant

■ Harold C. Weber, '18, Professor of Chemical Engineering, who came to the Institute in 1922 and who has been the recipient of many honors as a civilian and Army officer during both World Wars, has been appointed chief scientific adviser to the Army's Chief of Research and Development. The announcement of this appointment was made on October 8 by Wilber M. Brucker, Secretary of the Army, but Dr. Weber will continue to serve on the Institute's Faculty.

Professor Weber has been a member of the Army Scientific Advisory Panel for many years. He has also been chairman of the Chemical, Biological and Radiological sub-panel of the A.S.A. Panel. He is author of the textbook *Thermodynamics for Chemical Engineers* and of numerous technical papers; he also contributed the sections on thermodynamics and refrigeration to Marks's well-known *Mechanical Engineers' Handbook*.

During World War I, following his graduation from the Institute with a bachelor's degree in Chemical Engineering, Professor Weber served as a second lieutenant in the aviation section of the Signal Corps and later in the Chemical Warfare Service. In 1922 he became a Faculty member at the Institute. In 1934 he received the D.Sc. degree from the Eidgenossische Technische Hochschule in Zurich. During World War II he was technical adviser to the Chemical Warfare Development Laboratory at M.I.T. For his important work during World War II, Dr. Weber was awarded the Presidential Certificate of Merit and the Chemical Corps' Certificate of Achievement. He has been chairman of the Advisory Committee to the Chemical Corps for the past five years.

Meeting 333

■ Business — a good deal of it — was transacted at the 333d meeting of the Alumni Council, the first of the current school year, which was held at the M.I.T. Faculty Club on Monday, October 20. As President of the Association, John J. Wilson, '29, opened the meeting of 157 members and guests.

First item of business was a report by Donald P. Severance, '38, Secretary-Treasurer, in which changes in class affiliation for four Alumni were announced as having been approved. During the summer months, nine members of the M.I.T. staff and officers of the Association had paid visits to 15 M.I.T. clubs within the area bounded by Toronto, Atlanta, Albuquerque, and Honolulu. Excess of the Association's budget over disbursements, and of income over expenses for The Review were reported. Also reported as having the approval of the Association's Executive Committee was a slate of nominees for Departmental Visiting Committees to be submitted to the M.I.T. Corporation; a number of new Class Representatives, Club Representatives, and Associates to serve on the Alumni Council were also named.

Edwin D. Ryer, '20, chairman of the Alumni Fund Board, reported on the success of the Second Alumni Fund Conference (as summarized on page 26 of the November issue of The Review), and Hugh S. Ferguson, '23, chairman of the Audit and Budget Committee, reported that the accounts of the Alumni

On the Horizon

January 31, 1959 — 14th M.I.T. Alumni Regional Conference, Detroit, Mich. (For reservations, consult Thomas F. Morrow, '35, Chrysler Corp., 341 Massachusetts Avenue, Detroit 31, Mich.)

March 12-14, 1959 — 11th Annual Fiesta, M.I.T. Club of Mexico, Mexico City, D.F. (For reservations, consult Clarence M. Cornish, '24, Margaritas 257, Villa Obregon, Mexico 20, D.F., Mexico.)

Association and The Review had been examined and found to be in order.

James M. Driscoll, '96, and F. Leroy Foster, '25, presented resolutions, respectively, on the late John A. Rockwell, '96, and George A. Packard, '90. The resolutions were adopted by a silent rising vote.

It is customary for the Secretary in his report to the Alumni Council to summarize the M.I.T. clubs that have been visited since the last meeting by members of the Institute family. This past spring H. B. Richmond, '14, Life Member of the M.I.T. Corporation and a Past President of the M.I.T. Alumni Association, visited the M.I.T. Association of Japan on his trip to the Orient. As an indication of the value of M.I.T. clubs and what they stand for, Mr. Richmond described his visit with our Japanese Alumni; the responsibilities that these men have in their country, the interest they have in the affairs at M.I.T., and their indescribably warm hospitality.

Final speaker of the evening was William P. Allis, '23, Professor of Physics at the Institute, whose topic was "The Present State of Research on Controlled Fusion." Professor Allis was one of several members of the M.I.T. staff who were at the second United Nations Conference on the Peaceful Uses of Atomic Energy at Geneva, with a particular interest in the week of sessions on thermonuclear fusion.

This 1958 Atoms for Peace Conference was about twice the size of the 1955 Conference. There were approximately 5,000 delegates. Twenty-three hundred papers were submitted (144 on fusion) and 650 papers orally presented (45 on fusion). In 1955 the secret work on fission was declassified; in 1958 the work on fusion was declassified.

Showing colored pictures, principally of the exhibits of the U.S.S.R. and the U.S., Professor Allis described, in elementary terms, the physical principles underlying thermonuclear fusion; and he described the various devices that have been developed in Russia and in this country at Princeton, University of California Radiation Laboratory, Oak Ridge, and at Los Alamos in an attempt to contain thermonuclear reactions and avoid the various types of instability.

One commonly hears that by 1975 nearly all new power stations that will be built will be operated on nuclear energy — from controlled fission. It is still anyone's guess when controlled fusion will be available for the economic production of power. Professor Allis' estimate is that controlled fusion reactions will be commonplace in 10 years; power will be available from fusion in 30 years; and the economic production of power will take 100 years.



Photo by Edwin Gray, Falmouth

Members of the Class of 1913 with their wives and guests totaled 59 who celebrated the 45th reunion of the Class at the Oyster Harbors Club in Osterville. Photographed on June 14, the group enjoyed a week end on Cape Cod, just preceding Alumni Day activities on June 16 at the Institute. Reunion chairman was William R. Mattson of Newtonville.

Relatively Speaking

■ Delving into statistics on this year's Freshman Class, evidence discloses several familial ties (parents, grandparents, uncles, cousins, and brothers) existing between some of the 900 first-year students and Alumni who matriculated at M.I.T. in former years. Of this group with M.I.T. kinsmen, The Review is pleased to list below the 37 who are sons of Alumni — and in one case, a grandson of an Alumnus:

Student	Father
Yuan B. Chu	Lan J. Chu, '35
Harvey E. Cline	Max Cline, '05 (Grandfather — Deceased)
Timothy P. Coffey, Jr.	Timothy P. Coffey, '32
John L. Costello	Angelo Costello, '26
John M. D'Albora	John B. D'Albora, Jr., '34
James S. Draper	Charles S. Draper, '26
James C. Evans, Jr.	James C. Evans, '25
Edward A. Feustel	Fred P. Feustel, '33
Charles G. Glueck, Jr.	Charles G. Glueck, '34
Michael A. Gorfinkle	Meyer G. Gorfinkle, '27
Arthur L. Harper	Donald R. Harper, '40
Steven L. Kleiman	Macklen Kleiman, '35
David H. Koch	Fred C. Koch, '22
William I. Koch	Fred C. Koch, '22
Randall H. Kunz	Warren J. Kunz, '34
Vincent E. Lysaght, Jr.	Vincent E. Lysaght, '24
Robert A. Lytle, Jr.	Robert A. Lytle, '30
Donald P. Martin	Byron N. Martin, '31
Edward M. Myskowski	Leo J. Myskowski, '28
Charles W. Niessen	William Niessen, '33
Stephen E. Phinney	Robert M. Phinney, '04
David F. Pope	Harold W. Pope, '39
Frederick A. Prael, 3d	Frederick A. Prael, Jr., '36
Laurence R. Proulx	Louis J. Proulx, Jr., '36
Richard P. Rae	James R. Rae, '28
Stephen C. Root	Darrell A. Root, '35
James A. Ross	Charles H. Ross, '35
Bardwell C. Salmon	Chenery Salmon, '26
Philip R. Sheridan	Philip E. Sheridan, '42
Bruce E. Sherrill, Jr.	Bruce E. Sherrill, '28
Richard S. Shirley	Paul J. Shirley, Jr., '38
Douglas W. Steele	Ernest R. Steele, '32
Robert B. Strong	Robert L. Strong, '32
Stephen D. Uman	Abraham S. Uman, '30
Michael W. Waidelich	Alfred T. Waidelich, '30
Fredric C. Weihmiller	Horace E. Weihmiller, '25
George M. Wyman	George F. Wyman, '30

Educational Services

■ The formation of "Educational Services, Inc." was announced late in October by Detlev W. Bronk, President of the National Academy of Sciences, and J. A. Stratton, '23, Acting President of the Institute. The new corporation is an independent, nonprofit organization to take over from the Institute the major responsibility for continuing the work of its Physical Science Study Committee in developing new methods and materials for the teaching of secondary school physics. The National Academy of Sciences was instrumental in bringing to culmination plans for forming the new corporation.

As announced in the February, 1957, issue of The Review (page 194), the Physical Science Study Committee was established at M.I.T. in 1956 when President James R. Killian, Jr., '26, and Jerrold R. Zacharias, Professor of Physics, called together a distinguished group of scientists to seek ways in which the teaching of physics in secondary schools could best meet the challenge of the Twentieth Century. The over-all goal of the Committee was to develop and to make available new techniques for the teaching of science. The pioneering work of the Physical Science Study Committee was reported in "Educational Methods and Today's Science — Tomorrow's Promise" by Professor Zacharias in The Review for July, 1957.

Laird Bell of Chicago has been elected chairman of the Board of Trustees, and James E. Webb of Oklahoma City as president of the new organization which has headquarters at Watertown, Mass. Among the facilities available to Educational Services, Inc. is a studio in which motion pictures for classroom use are being made. The preparation of a new textbook, the development of do-it-yourself laboratory apparatus, and the writing of numerous paper-bound books to interest young people in various technical areas of scientific study are among the projects being conducted by Educational Services, Inc.

During the past two years, several hundred high school teachers in physics have been trained in the aims and methods of this new curriculum, and it is expected that this year some 12,000 students will be taught the new program.

Individuals Noteworthy

■ Prominent in the news during the fall were the 20 promotions, elections, or appointments enumerated below:

Paul W. Litchfield, '96, as Honorary Chairman, and *Russell DeYoung*, '40, as President, Goodyear Tire and Rubber Company . . . *John C. Barker*, '20, as Director, Maine Medical Center;

Arthur E. Raymond, '21, as Senior Vice-president in charge of Engineering, Douglas Aircraft Company . . . *James H. Doolittle*, '24, as Chairman-elect, Space Technology Laboratories . . . *Garvin A. Drew*, '25, as Manager, A. Schrader's Son Company, Brooklyn, N.Y.;

Donald G. Vaughan, '25, as President, the American Society of Safety Engineers . . . *Vice-Admiral Clarence E. Ekstrom*, '31, as Commander of the Sixth Fleet, United States Navy;

John Chipman, Professor of Metallurgy at M.I.T., and *John H. Hollomon*, '40, as President and as Director, respectively, of the Metallurgical Society of the American Institute of Mining, Metallurgical and Petroleum Engineers; *Oscar T. Marzke*, '32, as Chairman, Institute of Metals Division, and a Director, the Metallurgical Society, A.I.M.E.;

Stanley H. Walters, '33, as Vice-president—Sales, Calidyne Company, Inc., Winchester, Mass. . . . *George Wrigley, Jr.*, '33, as President, J. E. Serrine Company, Greenville, S.C. . . . *Edward L. Dashefsky*, '36, as Plant Manager, Missile Plant, Raytheon Manufacturing Company, Lowell, Mass.;

Irving N. Kelsey, '36, as Manager, Pittsfield restaurant, Friendly Ice Cream Company . . . *George J. Schwartz*, '42, as President, Yankee Post, American Ordnance Association . . . *Eric M. Wormser*, '42, as Vice-president in charge of Engineering and Sales, Barnes Engineering Company, Stamford, Conn.;

Lewis A. Rupp, '43, as Vice-president and General Manager, Ionics, Inc., Cambridge . . . *H. Gordon Fromm*, '50, as Vice-president, Operations, International Latex Corporation, Dover, Del. . . . *George B. Stone*, '58, as General Manager, J. B. Roerig and Company division, Charles Pfizer and Company, Inc.

■ Special honors recently announced or awarded to 10 Alumni—two of whom are members of the Institute's Faculty—are as follows:

To *Ernest B. MacNaughton*, '02, an Award for Distinguished Service to the state of Oregon, by the University of Oregon . . . to *Thomas C. Desmond*, '09, its Certificate of Merit, by the City Club of New York; and a plaque commemorating distinguished services to the engineering profession, by the New York State Society of Professional Engineers . . . to *Crawford H. Greenewalt*, '22, the 1958 Medal for the Advancement of Research, by the American Society for Metals;

To *Charles S. Draper*, '26, Professor of Aeronautical Engineering at the Institute, the Blandy Gold Medal for "distinguished services related to all phases of naval ordnance progress," by the United States Navy . . . to *James B. Fisk*, '31, an honorary doctorate of science, by Williams College . . . to *Leo B. Moore*, '37, Associate Professor of Industrial Man-

agement at M.I.T., the grade of fellow, for outstanding service to standardization, by the Standards Engineers Society;

To *John H. Kempster*, '47, the Lybrand Gold Medal for the best paper submitted from April, 1957, to April, 1958, by the National Association of Accountants . . . to *Robert T. Ryland, Jr.*, '51, a Superior Accomplishment Award for outstanding work performance, by the U.S. Naval Proving Ground, Potomac River Naval Command . . . to *Alan L. McWhorter*, '55, and *James W. Meyer*, both of M.I.T. Lincoln Laboratory, an Annual Award Certificate for the best technical paper presented at last year's conference, by the National Electronics Conference.

I.L.O. Director

■ Vincent A. Fulmer, '53, has been appointed director of the Institute's Industrial Liaison Office, succeeding William R. Weems, '35, who has served as director of I.L.O. since 1952. Mr. Weems left the Institute late in October to work with the International Coöperation Administration in the development of industry in Korea.

First appointed Industrial Liaison Officer in 1953, Mr. Fulmer has been assistant director of I.L.O. since 1956. In 1949 he was graduated *cum laude* from Miami University in Oxford, Ohio. He took graduate work in industrial economics at M.I.T. and was formerly on the teaching staff in the Department of Economics and Social Science at the Institute, and later, at Williams College. He is a member of Phi Beta Kappa, as well as of the American Economic Association, the Institute of Management Sciences, and the Operations Research Society of America.

Mr. Weems was born in Kaesong, Korea, of missionary parents. He was graduated from the Georgia Institute of Technology in 1933 and received the S.M. degree from M.I.T. in 1935. After two years of engineering work on aircraft instruments he taught aeronautical engineering at Georgia Institute of Technology. During World War II he became a lieutenant colonel and was appointed assistant commandant at Wright-Patterson Air Force Base. He was named assistant professor of aeronautical engineering at M.I.T. in 1946, and became associated with the Industrial Liaison Office in 1950. In 1955-1956 he worked in Korea under the United States technical assistance program.

The Industrial Liaison Office was initiated in 1947 to correlate and strengthen the nation's industrial and academic resources. It administers a program by which industry may have a direct link with the entire range of nonclassified research in which M.I.T. is engaged. The I.L.O. actively attempts to bridge the gap between the Institute's creative efforts and industry's commercial developments resulting from newly acquired knowledge. The I.L.O. program also assures a realistic orientation and vigorous implementation of the basic educational efforts being conducted at M.I.T. as reflected by the nation's technological needs. With the help and co-operation of the Faculty, the I.L.O. is responsible for implementing the Institute's contractual arrangements with some 90 industrial firms affiliated with the Industrial Liaison Office.

Fair and Sunny

■ Historically, weather forecasting developed as a qualitative art, devoid of any fundamental basis in the laws of meteorological hydrodynamics and thermodynamics. In the past decade, vigorous research efforts have led to substantial increases in man's understanding of the evolution of atmospheric patterns of air flow, and have placed the prediction of tomorrow's pattern of air flow upon a sound theoretical basis. This achievement, however, deals with only a portion of the total problem of weather forecasting, since it leaves untouched the important problem of whether tomorrow will be sunny or rainy.

Fortunately, there is a link between the pattern of air flow and the occurrence of cloudiness and precipitation. It is clear that significant condensation of water in the atmosphere occurs as a consequence of the vertical component of air motion. That is, rising air expands and cools as it moves toward lower pressure aloft. Since the saturation vapor pressure varies directly with temperature, such cooling may produce saturation with respect to water vapor in the rising mass of air. Any further ascent is accompanied by condensation of water in the form of tiny cloud droplets, and this process leads typically to the formation of precipitation. On the other hand, descending air is warmed by compression. In this circumstance, no condensation will occur; indeed, cloud droplets already present in a sinking mass of air will tend to evaporate.

Two typical scales of vertical motion may be distinguished, as shown in Figs. 1 and 2. Large-scale motion occurs over areas of the order of hundreds of thousands of square miles, but the intensity of vertical motion (indicated by lengths of arrows) is only a few hundredths of a mile per hour. This motion is related to the systems of high and low pressure found on the weather map and to their accompanying broad regions of clear skies and extensive cloudiness and precipitation. A small-scale pattern of vertical motion is associated with individual clouds of the cumulus type. These patterns occur over areas of only a few square miles but may attain considerable intensity, of the order of tens of miles per hour.

The small-scale vertical motion may be measured directly, but so far its small extent, both in time as well as in space, has precluded attempts to predict its effects, except in a statistical sense.

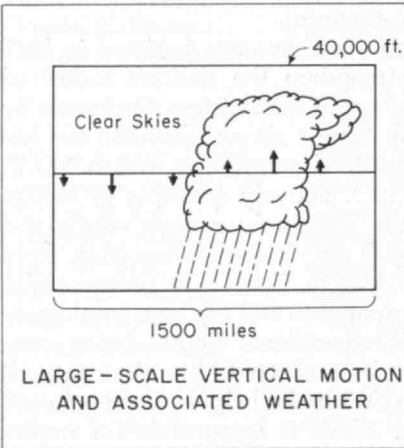
At present, it is not possible to measure directly the large-scale vertical motions. The theory underlying the prediction of the patterns of horizontal air motion, however, also implicitly contains a prediction of the large-scale vertical component. Research directed toward the elucidation of this type of estimate of vertical motion and its relationship to cloudiness and precipitation has been undertaken by Frederick Sanders, '54, Assistant Professor of Meteorology. A summary of some of the results of this work for central and eastern United States during the colder half of the year is presented in Fig. 3.

It is seen that both types of weather phenomena are related to the vertical motion in the expected sense. Thus, when the air is ascending, sunny skies are relatively infrequent while precipitation occurs relatively often. This situation is reversed when the large-scale vertical motion is downward.

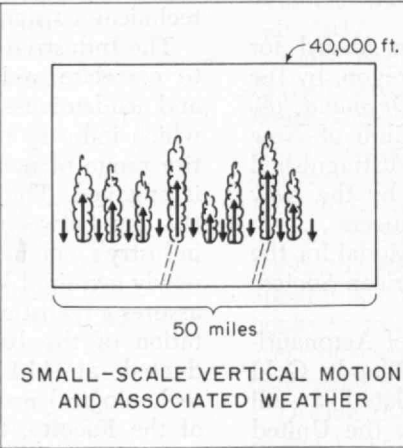
It is evident from the data in Fig. 3 that forecasts of sunny skies or of precipitation cannot be made solely on the basis of this estimate of vertical motion with an assurance of more than about 45 per cent. An improvement in the results has been obtained by considering the initial water-vapor content of the rising or sinking air. Further improvement will likely result from a more adequate theoretical estimate of the vertical motion, in which account is taken of: (1) the effects of the flow of air over sloping terrain; (2) friction between the earth's surface and the overlying air layer; (3) heating or cooling of the air by contact with land or water surfaces; and (4) the susceptibility of the air to small-scale vertical motions.

To date, the results do not provide an immediate prospect for substantial improvement in weather forecasts. Nevertheless, a basis in hydrodynamics and thermodynamics has been placed under the qualitative art of prediction of cloudiness and precipitation, and prospects for further progress are good.

This research is sponsored by the Geophysics Research Directorate of the Air Force Cambridge Research Center.



LARGE-SCALE VERTICAL MOTION AND ASSOCIATED WEATHER



SMALL-SCALE VERTICAL MOTION AND ASSOCIATED WEATHER

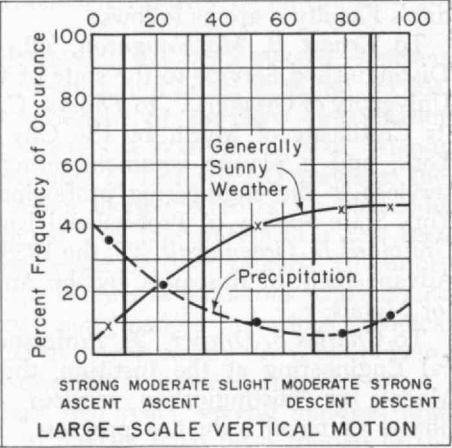


Fig. 3. Correlation between vertical motion of air and precipitation or sunny weather.

Industrial Dynamics

■ During the next 25 years we can expect changes in the management profession that are as spectacular as the changes that have already occurred in engineering over the last quarter century. Numerous "management science" research groups are exploring the principles that underlie industrial and economic behavior. As these principles are validated and reduced to usable form, they should provide a foundation for management progress as effective as the underlying principles of physics provide for engineering.

An excellent example of this is the study of "industrial dynamics" being conducted in the M.I.T. School of Industrial Management, under the direction of Jay W. Forrester, '45, Professor of Industrial Management, and supported by the Sloan Research Fund, the Ford Foundation, and industrial companies.

In this program, which has been under way for more than a year, a company is analyzed, taking account of the effects of time delays, information sources, organizational forms, and management policies. These factors can then be shown to interact in a way that may create the employment, inventory, and production fluctuations that are so often attributed solely to external causes. The analysis must incorporate the basic characteristics of the company like factory lead time, inventory policies, construction time for new plants, union contract provisions, and advertising policies. Such items are the ones the manager considers and tries to interrelate in the everyday intuitive management of a business. In a more complete representation of the company, intangible items must also be specified, such as, the likelihood of results from research expenditures, consumer response to advertising, and market behavior. At first, the analysis can use estimates of these factors and later the analysis itself can indicate which factors justify more careful measurement. Eventually this quantitative understanding of many of the underlying organizational and economic principles should make possible the "design" of organizational forms and policies that enhance the management objectives.

More companies fail from poor management than from poor engineering. Yet, we have the anomaly of thorough systems studies on products and almost none on the behavior and future prospects of the company itself. Research on devices is fashionable. Research toward better management has yet to be fully appreciated.

The industrial dynamics program at M.I.T. is aimed at four goals:

1. To develop in the manager a better intuitive feel for the time-varying behavior of industrial and economic systems. Quantitative studies are beneficial even before one has accurate data. They explain the nature and interaction of the forces that control the company. They show critical areas and highlight points that need careful attention.

2. To provide a background showing how the major aspects of a company are related to each other, so that the developing manager can derive the

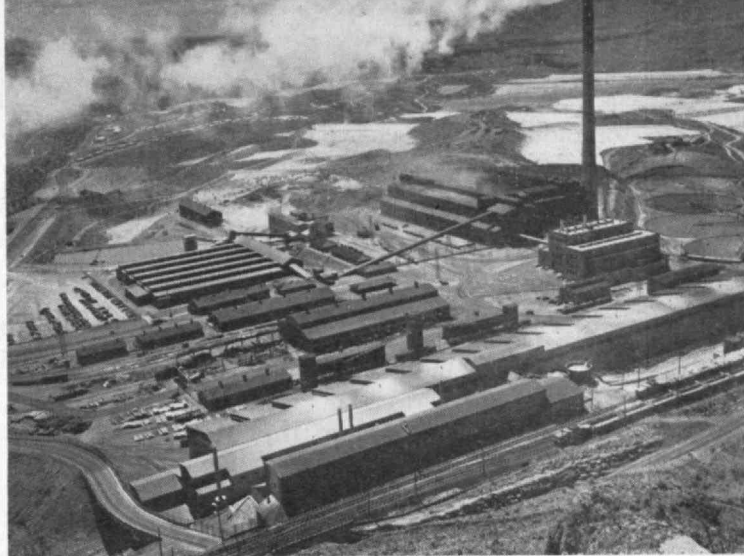


Photo by Bill Sears from Black Star

As the world's industry continues to expand, better understanding of the forces causing industrial fluctuation, growth, and stability is required; it is being achieved through modern techniques of analysis in which large-scale computers are bound to play an increasingly significant role.

greatest benefit from his work experience. His operating experience should be more meaningful if he has a better understanding of how his immediate environment is related to the fluid, changing character of the company as a whole.

3. To help predict the future course of an existing organization. Present decisions often determine the future company welfare five years or more into the future. Underlying, unchanging characteristics of a company can cause erratic manifestations in operations. We can hope, eventually, for better ability to see where present company practices are to lead.

4. To improve the future prospects of a company. Beyond prediction, lies the ability to redesign an organization and its policies to improve its chances of success.

Industrial dynamics is in an early stage of development. Although even preliminary studies can have immediate value in guiding intuitive decisions, the full impact will not be felt for one or two decades.

It now appears that the next five years will be devoted to exploratory research, development of basic analytical techniques, demonstrating practical importance through success in specific industrial situations, and establishing new academic programs for training future managers.

Already there has been substantial progress. Industrial dynamics is being taught in the program of the Sloan Fellows and as a graduate subject in the M.I.T. School of Industrial Management. Last summer, during the last two weeks of August, a special summer program for men from industry was offered for the first time. A growing number of graduate theses are exploring the basic principles that underlie major management problems — the causes of economic fluctuation, the management of research in new technological developments, and instability of the textile industry.

From initial research that started with the core of production and distribution activities, the studies are gradually being extended into pricing, advertis-

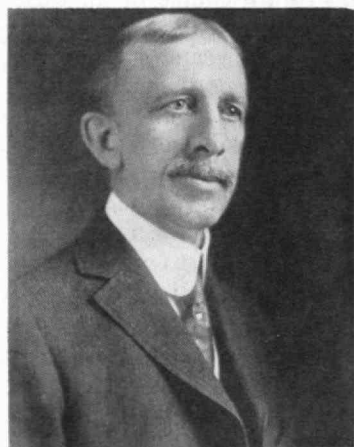
ing, market behavior and capital equipment. A group is starting under John L. Enos, '49, Assistant Professor of Industrial Management, to evolve a much more comprehensive mathematical model of national economic phenomena than has ever before been undertaken. This will use information flow and decision making as the framework to tie together sectors representing agriculture, non-durables, consumer durables, capital equipment, secondary manufacturing, extractive industries, financial institutions, credit, labor supply, and the consumer market.

Twenty-five Years Ago This Month . . .

■ Technology's annual fiscal report by Treasurer Everett Morss, '85, covering 1932-1933, showed that the Institute's net operating income had declined to \$2,780,000, or 8 per cent under that of 1931-1932; but net operating expense also had been reduced so that the deficit for 1932-1933 was \$5,727 compared with \$15,575 in the previous fiscal year.

Mr. Morss reported that on the previous June 30 the book value of the Institute's "land, buildings, and equipment" and its "endowment funds" were recorded, respectively, as \$15,703,259 and \$32,731,230. Capital gifts, however, totaled but \$175,000 for 1932-1933, the lowest of any fiscal year since 1911.

Income from students was \$1,425,000, which was \$114,000, or 7 per cent less than in 1931-1932 — thus reflecting a corresponding drop of 11 per cent in enrollment. Of the \$1,425,000 of income from students, \$335,950, or 23 per cent, was provided by scholarships and loans — a much higher proportion than in any previous year.



Everett Morss, '85

■ Registrar Joseph C. MacKinnon, '13, according to his annual census of the student body made November 1, found that the 1933-1934 registration totaled 2,606, a drop of 225, or 8 per cent, from 1932-1933.* The entering Freshman Class of 1937 numbered 485, or 77 less than the entering Freshman Class of 1936. Sophomores were 39 less than in 1932-1933, juniors were 93 less, and graduate students 27 less; but there were 11 more seniors than in the previous year.

■ The American Association for the Advancement of Science, then comprising 139 national scientific and engineering organizations with a total mem-

*The Institute's registration curve following World War I rose to a high of 3,505 in 1921-1925, then dropped to a low of 2,671 in 1926-1927, rising to its next high of 3,209 in 1930-1931. From that year on, it declined to a low of 2,507 in 1934-1935 before turning upward to reach its next high of 3,138 in 1940-1941.

bership of 20,000, held its 93d session in Cambridge and Boston. *Samuel C. Prescott*, '94, the Institute's Dean of Science, was chairman of the local committee in charge of arrangements, and *Professor Arthur L. Townsend*, '13, of the Department of Mechanical Engineering, was the committee's secretary.

■ Congratulations were being extended to *Christopher J. Carven*, '84, upon becoming Commissioner of Public Works for the City of Boston; . . . to *Albert Sauveur*, 89, as a new honorary member of the American Institute of Mining and Metallurgical Engineers; . . . to *Robert T. Haslam*, '11, and *Rufus E. Zimmerman*, '11, recently appointed Vice-presidents, respectively, of the Standard Oil Development Company and the United States Steel Corporation; . . . and to *Professor Arthur C. Hardy*, '18, upon his election as Vice-president of the Optical Society of America.

Athletic Résumé, 1957-1958

Supplementing the various athletic reports printed in the November issue (page 25), The Review is pleased to present, in the following paragraphs, additional reports on four athletic teams as prepared by: Coach Frank S. DuBois, Jr., on the heavyweight crew; Coach Charles Batterman on freshman lacrosse; Coach Edward A. Crocker on varsity tennis; Assistant Coach Arthur E. Farnham on Track and Field.

Crew

The 39th season for M.I.T.'s varsity heavyweight crews has not been a particularly auspicious one in the win-loss column, but it has been an encouragingly competitive one in many ways. In an over-all total of 18 races, the heavyweight upperclassmen have met 48 shells in intercollegiate competition. They were bettered by 31 of these and won over 17 of them. Although this leaves much room for desired improvement, it was hearteningly supported throughout by the desire and inclination of the oarsmen themselves.

This was a season which saw increased participation in the form of three varsity crews on the water until finals, and one which saw an M.I.T. junior varsity crew at the Intercollegiate Rowing Association Regatta for the first time since 1949.

At the I.R.A. Regatta at Syracuse in June, generally accepted as the best test of any given crew's composure and ability after a season's work and conditioning, the varsity crew surprised everyone by leading the field of 10 varsity crews for the first mile and a half of the three-mile encounter. They were a strong crew individually, but lacked the conditioning, for the most part, of their rivals for this distance. Their unusually late spring start, due to weather and minus indoor facilities, and their later-than-usual finish in June, due to the school calendar, were definite handicaps.

But nonetheless, they were a squad that rowed hard and faithfully. As a final varsity and junior varsity, they earned respect; were competitive with their rivals within the limits of their ability; and

(Continued on page 110)

A Co-operative Training Program for Exploration Geophysicists

Industry-wide support is accorded a program, initiated in 1951, which permits students of geophysics to learn while they earn

by ROBERT R. SHROCK

LAST summer 18 undergraduate students, representing 18 U.S. schools (including M.I.T.) and carefully selected from more than 600 applicants, spent three months as helpers on seismic and gravity field parties. They were employed by a Texas-based geophysical company and were participants in a unique co-operative training program originated by an M.I.T. Alumnus and an M.I.T. professor. These carefully chosen fourth- and fifth-year students, mainly geologists and geophysicists but including a pre-law student and several liberal arts majors, participated in a co-operative educational effort sponsored by Geophysical Service Inc. of Dallas, Texas. The former president and present chairman of the board of Geophysical Service Inc. is Cecil H. Green, '23, himself the product of a co-operative plan still going full force in the Institute's Department of Electrical Engineering.

The G.S.I. Student Co-operative Plan, as this educational project is now designated, was initiated in the summer of 1951. During its eight summers of operation it has given valuable training to 161 student participants, almost all of whom have either accepted employment in the petroleum industry or are continuing graduate work with this ultimate objective.

The co-operative plan in geophysics was born one spring afternoon in 1951 when Dr. Green paid a visit to the Institute. During this visit, Dr. Green called at the headquarters of the Department of Geology and Geophysics to learn whether some students in geophysics in Course XII might be interested in summer employment with his firm, Geophysical Service Inc. This firm contracts its seismic and gravitational exploration services, on a world-wide basis, to the petroleum industry and would be in an excellent position to attract students for summer work.

The very enjoyable conversation the writer had with Dr. Green soon disclosed that both of us had many professional interests in common. Upon completion of their academic programs, Dr. Green also wished to employ a number of outstanding graduates in geophysics for his company. The Department of Geology and Geophysics, on the other hand, was interested in finding additional rewarding professional opportunities for some of the best students in geophysics which this Department was training. Both sides recognized the benefits to be derived by providing properly planned practical experience in the summer for students who were still engaged in academic studies during the rest of the year. Out of that

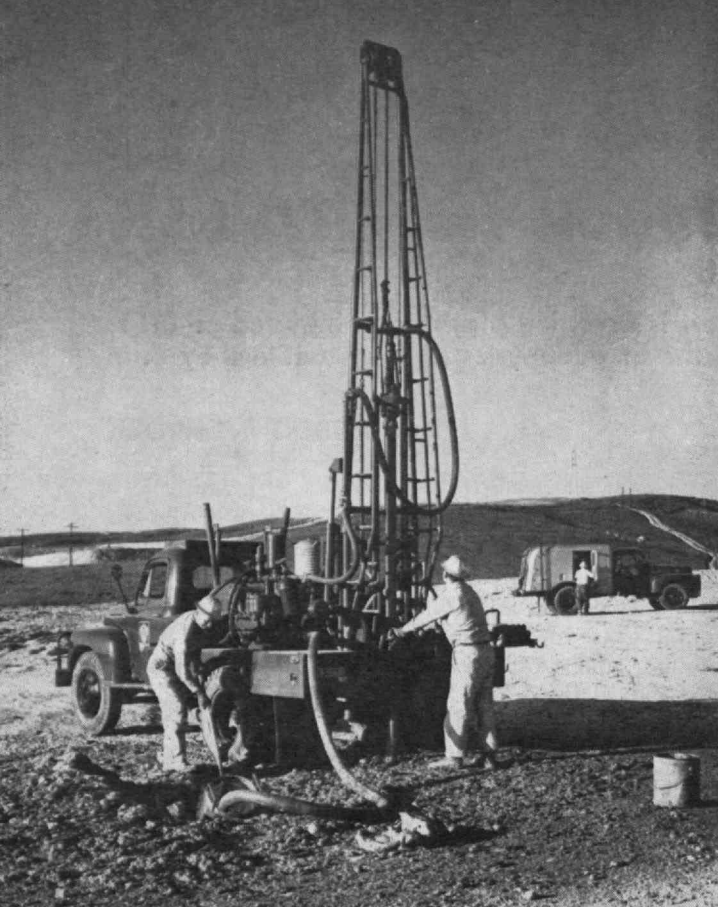
afternoon conversation the broad outlines of the co-operative training program for exploration geophysicists was evolved.

It was agreed that G.S.I. would hire the entire Junior Class of 16 Course XII geophysicists for the summer and would assign them to seismic parties working in the United States. Because M.I.T. students constituted 16 of the 19 participants that first summer, the program was called the M.I.T.-G.S.I. Student Co-operative Plan. The plan was an immediate success. By the end of the second summer, many schools were asking: "Why does M.I.T. get preferential treatment?" and "How about taking some of *our* best students?" As a consequence of these demands, the number of M.I.T. applicants was voluntarily reduced to three or four. A dozen other schools were invited to recommend one of their best students, the M.I.T. designation was dropped from the name of the co-operative plan, and the modified program emerged with its present designation — The G.S.I. Student Co-operative Plan. The extent to which the student body has changed throughout the eight years that the plan has been in operation, as more educational institutions have taken part in this unusual training program, is shown in Table I.

TABLE I
Distribution of Participants in G.S.I. Co-operative Program

Summer	M.I.T. Students	Non-M.I.T. Students	Total Number Participants	Schools Represented
1951	16	3	19	4
1952	8	13	21	5
1953	5	21	26	15
1954	4	17	21	16
1955	4	17	21	16
1956	3	17	20	16
1957	1	14	15	16
1958	1	17	18	18
	—	—	—	—
	42	119	161	44 different institutions

Since the inception of the plan, 161 students have participated. Of these, 42 have come from M.I.T. and the other 119 have represented 43 other colleges and universities. They have come from institutes of technology including M.I.T., Caltech, and Georgia Tech; from large, privately endowed universities such as Harvard, Yale, New York University, Amherst, and Williams; from smaller colleges including Franklin and Marshall, Centenary, Berea, Baylor, Marietta, and Houston; from state universities such as U.C.L.A.,



Robert Yarnell Richie

Students help regular drillers put down shallow post holes at the bottom of which an explosive charge is placed.

Texas, Oklahoma, Missouri, Kansas, Wisconsin, Iowa, and Massachusetts; and from 22 other well-known and widely scattered schools. Truly the G.S.I. Student Co-operative Plan has achieved a nationwide representation during its eight years of operation.

Because of the unusual educational opportunities offered by this plan, the very large increase in the number of applications has considerably exceeded training facilities such as even G.S.I. could provide. Therefore, during the past two summers, G.S.I. has found it necessary to limit each school to a single participant in order to treat all schools alike.

Thus, while M.I.T. is no longer able to send more than one student to the plan per summer, the Institute's Department of Geology and Geophysics can feel that it has made an important contribution to the training of future geophysicists. It has done so by helping to start, and then to support strongly, yet another pioneer effort in co-operative education in the true M.I.T. tradition of "learning by doing."

What is the Co-op Plan?

The G.S.I. Student Co-operative Plan is a program of lectures, tours, informal conferences, and field work. It is designed to give interested and qualified college students an opportunity to learn firsthand more about applied geophysics than can be taught in the classroom. It does this by providing summer employment with geophysical exploration field parties doing contract work in domestic areas for any one of the major U.S. petroleum companies.

This is how the program works. Each summer about 18 or 20 students are chosen to participate. These participants, carefully selected from a large number of applicants (more than 600 the past summer), are generally students in geophysics, geology, or engineering (less commonly in mathematics, physics, and liberal arts) who have completed at least their junior year. However, a few men with bachelor's degrees and more advanced graduate students have also been accepted in special cases. Each student selected must have a faculty recommendation, at least a "B" average, a healthy constitution, and a genuine interest in geophysics or geology as a career. All participants are paid the going salary for employees with their experience. But participation is not just a paid job on a seismic or gravity crew. It is a superb opportunity to see and take an active part in every phase of exploration geophysics and, by such practical exposure, to learn how geophysics is utilized in the constant search for geologic situations favorable for the accumulation of new oil and gas. Consequently, when assigned his duties by the particular chief of party, each co-op student knows with certainty that he is involved in an actual exploration program.

How Does the Plan Work?

The primary aims of the plan are best stated by Dr. Green as follows:

"Our foremost aim is to generate increased awareness of applied geophysics as a profession among university students and faculties. We also strive to promote closer co-operation between our industry and the academic world and to give the student a sense of direction by allowing him to experience representative conditions under which he will work if he chooses to enter the field of geophysical exploration."

With these aims firmly in mind, G.S.I. invites the student participants (together with six or eight faculty representatives from the colleges where some of the students are registered) to come to Dallas for a four-day orientation program before going to the field. Key staff members from the operating groups and research laboratories of several oil companies are also invited to participate as lecturers or conference leaders. Because the plan was initiated through the co-operation of the Institute and G.S.I. in the early years of its operation, most of the students came from M.I.T. and the orientation program was administered primarily by personnel of G.S.I. and its related Texas Instruments, Inc. As the program expanded to its second stage, students from many other colleges shared in this unusual advantage. At the same time, an increasing number of local oil companies joined in the orientation project, although the program was still generally regarded as a G.S.I. activity. With the recently held eighth session, however, the program has moved into its third phase and has taken on an industry-wide character, as numerous leading oil companies, as far away as San Francisco, sent some of their best administrators and technical personnel to Dallas to contribute to this wise and provident undertaking. Last June, 10 professors joined the students and industrial representa-

tives, so that more than 75 students, scientists, educators, engineers, and administrators united forces during the orientation activities.

Last summer's orientation program, the best yet but typical of earlier ones, presented 43 comprehensive lectures averaging nearly half an hour each, three demonstrations, guided tours of three plants and research laboratories, and motion picture films of three field operations. All were designed to outline the diversified and challenging nature of the search for oil by geophysical exploration. The list of titles of the lectures offered during the summer of 1958, given in Table II, will indicate the breadth and diversity of the orientation program.

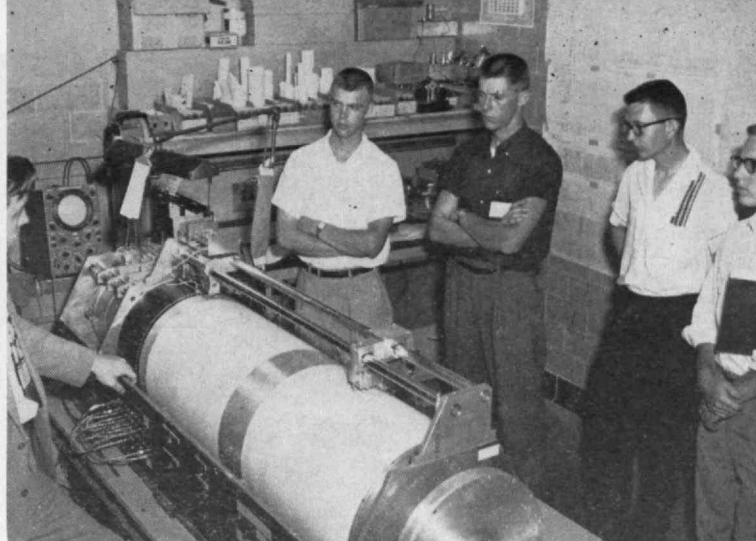
TABLE II

Lecture Titles for 1958 Season

1. The Fundamentals of Petroleum Exploration (seven G.S.I. staff members)
2. Exploration Abroad from the Point of View of an Oil Company (five staff members of the Atlantic Refining Company)
3. The Processing of Seismic Data (seven staff members of G.S.I. and Texas Instruments Inc.)
4. Organization and Research within an Integrated Oil Company (11 staff members of the Magnolia Petroleum Company)
5. Petroleum Engineering and Reservoir Evaluation (DeGolyer and MacNaughton)
6. Philosophy of Seismic Interpretation (Humble Oil and Refining)
7. Electronic Surveying Methods (Shell Development Company)
8. What is a Gravity Anomaly? (G.S.I.)
9. The Significance of Gravity Fields (Shell Oil Company)
10. The Use of Geophysics in Discovery and Development (Texaco-Seaboard Oil Company)
11. Topographic and Near Surface Effects on Seismic Data (Texaco-Seaboard Oil Company)
12. Using the Tools of Our Profession (Tennessee Gas Transmission)
13. Progressive Integration of Seismic and Geologic Information (M. K. Brachman Company)
14. Future Needs of Geophysics (Texaco-Seaboard Oil Company)
15. The Service Company in Foreign Operations (G.S.I.)
16. Management Development at Texas Instruments (Texas Instruments Inc.)
17. What Comprises an Exploration Pattern and What Part Does the Seismograph Play in it? (California Exploration Company)
18. Summary (G.S.I.)
 - (1) G.S.I.'s Safety Program
 - (2) "Make No Mistake" — a sound color motion picture film showing how to work correctly
 - (3) Suggestions for the summer ahead

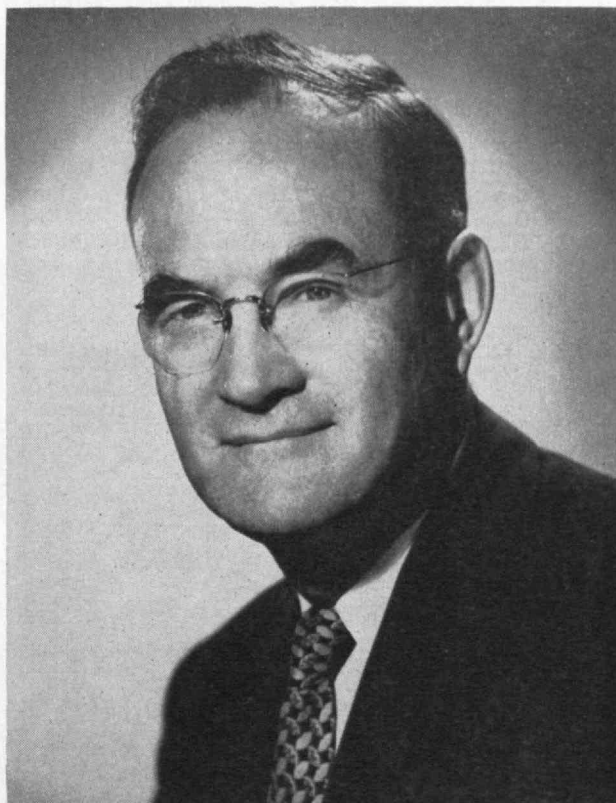
What Do the Co-operative Students Do?

Upon arriving on the job, the co-operative student takes his assigned place on the field party and starts to work in a position as helper or assistant. During



*F. L. Thompson
This group is learning how magnetic tape recordings are used in a modern geophysical research laboratory to analyze the traces made in the field by the shot.*

the summer the party chief rotates him from one assignment to another. In this way he gets experience in each of the following activities: surveying, drilling, shooting, recording, and office work (interpreting seismograms, and so forth). Every two weeks the party chief, in discussion with the student, prepares a personal appraisal report and submits it to G.S.I. headquarters in Dallas. A final evaluation of the student's performance is also submitted at the end of the summer. On the final day of his assignment, the student, on his part, is required to submit to G.S.I. a written report on one or more subjects in which he



*G.S.I. Photo
Cecil H. Green, '23, who with Robert R. Shrock initiated the co-operative course for geophysicists.*



Sounds produced by subterranean explosions are picked up by a group of pickup devices, or geophones, after being reflected by discontinuities or inhomogeneities in the earth's crust. If the geophone recordings of the blast are to have value in geophysical exploration, the positions of the geophones must be precisely known with respect to the shot point. Here co-operative students aid surveyors in determining the location of blast holes and geophones.

Robert Yarnell Richie

developed an interest during the summer. He is also encouraged to comment on G.S.I. policy, operational procedures, personnel practices, instrument design and performance, and similar matters if he cares to do so.

During the fall months, staff members of G.S.I. at Dallas carefully read and grade the written reports, correlate the merit ratings and final evaluation from the party chiefs, and ultimately draw up a tabular final evaluation report such as that shown in Table III. This report is sent to: (1) the heads of the appropriate department in each university delegating a co-operative student; (2) appropriate officials of the petroleum companies whose representatives participated in the orientation program; and (3) the students

themselves. Thus every person and organization directly concerned in any way with the plan has the same information concerning student participants. Such information is useful to each department head since it enables him to compare the performance of his students, as evaluated by others, with comparable evaluations on students from other colleges. It is also useful to oil companies since it provides all of them with the same opportunity to consider students for future employment.

Although the program is arranged and financed by G.S.I., who also pays the students for their summer work, neither this firm nor the students make any commitment during the time the program is in effect regarding future employment. It is worthy of note,



G.S.I. Photo

Drilling casing being racked by Edward A. Flinn, '53, during his assignment as a co-operative student in the Texas Gulf Coast. Members of the exploration party live in the houseboat shown anchored on the far side of the sand bar.

TABLE III

7th Annual G.S.I. Student Cooperative Program
June to September, 1957
Final Evaluation Report

Degree and Major	Grad. Work Planned	Field Jobs Filled	Subject of Report	Written Quality	Report Mark	Interest in Seismic Work Based on Written Report	Based on Performance	Location of Party	Final Eval. by PC
B.S. Geology			Withdrew					La.	
B.S. E.E.	Un-decided	D, S, O, R, Sh	7000B Amplifier System	Fair	12	No Comment	Average	Okla.	Above Average
B.S. Math.	Un-decided	R, O, S	Weathering and Sub-Weathering in S. Central Miss.	Very Good	2	Moderate	Average	Miss.	Above Average
B.S. Math.	None	S, R, O	Effect of Hole Depth and Shooting Medium on Record Quality	Fair	13	Moderate	Outstanding	Texas and La.	Above Average
B.S. Geop.	Masters Geop.	O, R, S	Need for Versatility in a Seismic Crew	Very Good	3	No Comment	Average	La.	Average
B.S. E.E.	Un-decided	S, O, R, D	Seismic Operation in a Swamp Area	Good	10	No Comment	Outstanding	La.	Out-standing
B.S. Geop.	Ph.D. Geop.	D, R, O	Experimenting for Improved Record Quality in Delaware Basin	Good	4	High	Above Average	Texas	Above Average
B.S. Geology	None	R, S, O	Working Conditions in Rapids, Avoyelles and Evangeline Parishes, La.	Very Good	1	High	Average	La.	Average
B.S. Geop.	None	O, S, R, D, Sh	General Exploration Problems in Sheffield Channel	Good	11	High	Average	Texas	Average
B.S. Geology	None	D, S, R, O	Mud Flat Operations in Laguna Madre	Good	6	Undecided	Above Average	Texas	Above Average
B.S. Geology	Masters Geology	S, O, C	Some Approaches in Detailing Salt Domes	Good	7	High	Above Average	La.	Average
B.S. Geology	M.S. Geology	S, R, Sh O	Paleozoic Stratigraphy of Four Corners Area	Good	5	High	Above Average	N. Mex. and Calif.	Above Average
B.S. Geology	Masters Geology	O, S, R, D	Seismic Velocities in S. Central Miss.	Fair	14	Moderate	Average	Miss.	Average
B.S. Geology	Masters Geology	O, Sh, R, S, D	Drilling	Good	9	Undecided	Above Average	Wyo.	Above Average
B.S. Geology	Masters Geology	R, S, D, O	Miss. River Delta	Good	8	High	Outstanding	Miss.	Out-standing

O — Office; R — Recording Unit; Sh — Shooting Unit; D — Drill; S — Surveying Unit

however, that Geophysical Service Inc. has employed 25 of the 38 geophysicists (and seven of the 42 M.I.T. students) who have participated in this program and have subsequently found employment in the petroleum industry.

The Future for Co-operative Students

Probably no better evaluation of the merit of the summer co-operative program for students in geophysics can be provided than the record of their subsequent professional work. No record is presented for the 18 students who took part in the program for the summer of 1958, since they are still completing their undergraduate studies. But between 1951 and 1957, inclusive, the program had 143 student participants. Of these, more than one quarter are continuing their studies, somewhat less than half are employed in the petroleum industry, and nearly all the rest are engaged in activities related to geophysics or in which a knowledge of geophysics is essential. What ultimately happened to the 143 participants who completed their undergraduate work is shown in Table IV.

Future of the Plan

This co-operative program for exploration geophysicists is a costly one, not only in dollars but perhaps even more in the time and effort on the part of many busy persons with heavy professional responsi-

bilities, who help put it into successful operation. One may well ask, therefore: "Is the program worth while, and should it be continued?" Here some pertinent comments are in order.

A student who participated in the program a few years ago wrote: "Until I spent a summer with a G.S.I. field party I never really knew the meaning of applied geophysics." Another commented to the head of his department at the university: "As a result of coming into direct contact with problems in our

TABLE IV

Professional Activities of Participants

During 1951-1957, inclusive, but excluding the 18 students in 1958, a total of 143 students took part in the program. They are engaged in the activities listed below:

Still in school	38	26.6%
In petroleum industry		
Geophysicists	38	
Geologists	23	
Other	3	
Total	64	44.7
Research	9	6.3
Teaching	8	5.6
Military	3	2.1
Mining	3	2.1
International Geophysical Year	1	0.7
Engineering	3	2.1
Government agencies	3	2.1
Other business	4	2.8
Unknown	7	4.9
Total	143	100.0%

seismic work, I now understand why you have advised me to take as much mathematics, physics, and electrical engineering as I can get."

The professors who have attended the orientation programs invariably come away with favorable impressions; they are enthusiastic in their support for continuing the program, and would very much like to see it expanded if possible.

But what of G.S.I., who pays the bill? Board Chairman Green says, "I feel that we are making a real contribution to the training of future explorationists for the petroleum industry and that our past efforts have definitely been worth while." President Fred J. Agnich says that, from the company's point of view, "Our Co-op Plan is a sound investment and is worthy of the fine support that all co-operating companies have given G.S.I. year after year. Even if we didn't eventually hire any of the participants, we feel that the plan is very much worth while because of the intangible benefits to us and our clients."

On the basis of many conversations I have had with Cecil H. Green, '23 — loyal Alumnus who, incidentally, now also serves Technology as a Special Term Member of the M.I.T. Corporation — I can say that the originators of the co-operative program for geophysicists are very much pleased with the training program that was devised one spring afternoon eight years ago. There is every reason, too, to be proud of

the many "alumni" of this comparatively new educational enterprise, for many of them now hold important posts and are doing valuable work in the petroleum industry.

Like so many other pioneering ventures introduced by M.I.T., this student co-operative plan admirably filled a real educational need and, for this reason, won immediate acceptance and support. The intrinsic merit of the program has caused it to pass from an experiment on the part of one educational institution and one industrial firm, to a well-established and much-sought-for program. It draws exceptionally well-qualified students from across the nation, and benefits from industry-wide participation in the orientation lectures.

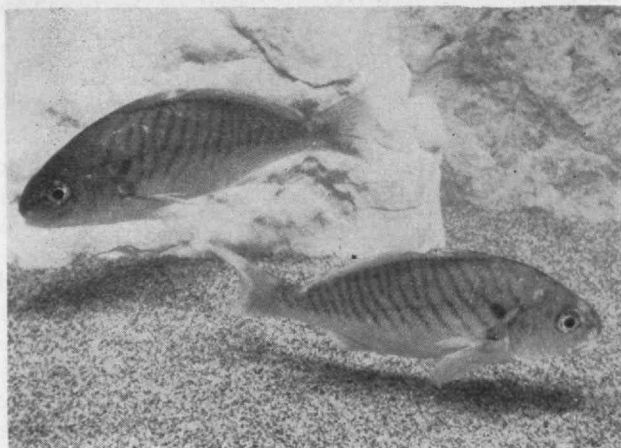
Of course, the natural growth of the program has diminished the number of M.I.T. students who may expect to participate in it in any given year. However, by sharing the benefits of a co-operative program in exploration geology with others, much greater benefits will undoubtedly be achieved than could possibly result from limiting the plan to its original mode of operation.

It is hoped that this significant co-operative effort on behalf of both industry and education can be expanded so that the cream of the nation's annual crop of burgeoning geophysicists will be able to enhance their education through "learning by doing."



G.S.I. Photo

A co-operative student is shown in the office, helping to analyze the seismograms recorded in the field.



John G. Shedd Aquarium

NOWHERE else do beauty and utility so closely intermingle as in the colors of the living world. The greens and certain other slightly pigments of plants are the sole means whereby the plants capture energy from the sun; and only thus is any sort of life on the planet Earth made possible. The red blood pigment that brings a flush to maidenly cheeks is the oxygen-transporting principle that keeps animals alive. Other colorful biological pigments enter vitally into nutrition, vision, reproduction, and protective coloration.

Green, red, and blue are the primary colors of the physicist, and the biologist might well consider the first two of these his primary colors. The green of chlorophyll is ubiquitous throughout the plant kingdom; in trees, grasses, flowering plants, ferns, mosses, and algae; and in the seaweeds and phytoplankton of the oceans. The red of blood is undebatably the primary color of the animal world. Curiously enough, hemoglobin, the red pigment of mammalian blood, and the universal green chlorophyll of the plant world, are closely related chemically. Hemoglobin and chlorophyll contain the same chemical elements (except that iron in the former replaces magnesium in the latter), and these elements are connected in analogous molecular arrangements. The late, great biochemist Gortner epitomized the relationship thus: "If one compares the formula of hemoglobin with that of chlorophyll, it will be noted that there is a striking similarity, indicating that the most important pigment of the plant kingdom and the most important pigment of the higher animals have much in common, and are actually modifications of the same structure."

Under the Greenwood Tree

Without the green of plants, the red-blooded animals of this earth could not exist, for in the ultimate analysis virtually all forms of life draw their sustenance from green plants. These chlorophyll-bearing plants, by the process of photosynthesis, use the energy of sunlight to make complex energy-rich carbohydrates from the simple compounds carbon dioxide and water, releasing free oxygen in the process. Thus—and only thus—is captured in available chemical form the energy that sustains nearly all forms of life, whether simple or complex, animal or

Life Is Colorful

Without its myriad colors, life would not be merely dull — it would be impossible

by **FREDERIC W. NORDSIEK**

vegetable. Fungi, bacteria, and other forms draw their nourishment from the tissues of higher plants or animals; herbivorous animals eat plants; carnivorous animals eat other animals, whether herbivorous or omnivorous. Thus, ultimately, the sustenance of all living forms may be traced back to green plants. To provide this sustenance the plants of the entire earth take up some 7×10^{11} tons of carbon dioxide from the air each year, and produce about 5×10^{11} tons of solid plant material.

Until the advent of atomic fission and fusion, energy from the sun captured by green plants provided not only the world's supply of food energy, but also its total supply of fuel. Wood makes available for burning, energy captured by present-day green plants; peat, coal, and petroleum are mineralized re-



H. Armstrong Roberts

Shrimp diet, from which flamingos obtain carotenoids, gives these birds their pink coloring.



H. Armstrong Roberts

All of the vertebrates — the fishes, amphibians, reptiles (such as the Gila monster shown here), and mammals — have blood containing the red pigment hemoglobin.

mains of green plants that grew and died on earth aeons ago, far back in geological time.

Thus photosynthesis by green plants is a uniquely essential biochemical process; it is also an extraordinarily efficient process. The first investigators to undertake the formidable task of quantifying the energy interchanges in photosynthesis concluded that four quanta of red light are absorbed in the conversion of one molecule of oxygen. Later studies suggested that more, some eight or 10 quanta, are needed. Even this higher figure would mean an energy conversion efficiency of about 35 per cent. And bear in mind that no chemical reaction outside of the plant cell is known that can convert as much as 10 per cent of absorbed light into chemical energy. If such a reaction could be found with efficiency approaching that of photosynthesis, there would be less pressing need nowadays to develop atomic power.

It is now known that chlorophyll does not get all the credit for the miracle of photosynthesis; that certain yellow and orange pigments, called the carotenoids, and always associated with chlorophyll in green plants, can also absorb light energy for use in photosynthesis. Also there are bacteria, containing a purple pigment, that are capable of effecting photosynthesis provided a reducing agent is present to accept the oxygen liberated; in the absence of a reducing agent photosynthesis by these organisms stops. Green plants, in contrast, are able to discharge their oxygen in free gaseous form; indeed thus they constantly replenish the free oxygen needed for respiration by most forms of life. It has been postulated that the purple photosynthetic bacteria may be survivors of an early stage in the physiological evolution of photosynthesis.

Finally, there is evidence that a red pigment found in some algae may be an even more efficient photosynthetic agent than chlorophyll. If confirmed, this would be a significant finding, because perhaps only a tenth of the earth's photosynthesis is carried out by green plants living on dry land; the rest is probably a function of many-hued lower plants dwelling in the oceans.

The Carotenoids

The carotenoids are a group of biological pigments that merit more than passing mention. Their prototype is carotene, named after the carrot. Carotene gives carrots their distinctive orange hue, and also endows yellow corn, egg yolk, and goldfish with their characteristic colors. But the carotenoids are protean in hue. They account as well for the red of tomatoes and robin feathers, the green of avocados and lobsters, the pink of shrimps and flamingos, and a vivid blue in the sex glands of barnacles. The carotenoids serve a valuable aesthetic function — along with another important group of red, blue, purple, and lavender plant pigments called xanthophylls — as the source of color not only in flowers and decorative plants but also in the brilliant autumn foliage that is such a glorious feature of every fall season in the northeastern United States.

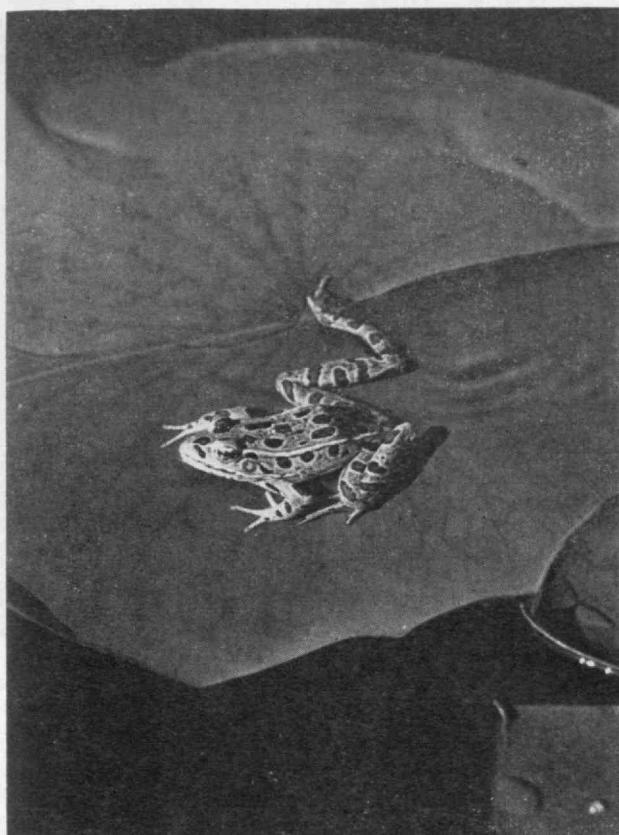
Carotene provides another interesting demonstration of the inseparable interdependency of animals and plants, the two broad divisions of the living world. Carotene is the precursor of vitamin A. When plant foods such as carrots or yellow corn are eaten by animals, some of their carotene is converted by the animals into vitamin A. Vitamin A is required for good nutrition by the human being and, so far as is known, by all other mammals as well. This vitamin, as such, can be made only by the animal organism; yet animals are able to make vitamin A only if they are provided with carotene as a raw material. In biochemical terminology, vitamin A is the only vitamin of exclusively animal origin that is made from a precursor of solely vegetable origin.

In the eyes of animals, vitamin A goes through further colorful vicissitudes. In the retina of animal eyes, localized in tiny organs called "rods," is a pigment known as visual purple. Visual purple is made by the body from vitamin A. Light entering the eye and striking the rods converts visual purple to visual yellow; this change instantaneously transmits a sensation of light to the nervous system. Rod vision is particularly effective in dim light. If an animal has an insufficient dietary intake of carotene or of vitamin A, there is a deficiency of visual purple and rod vision is impaired. Then a condition called "night blindness" results: for the ability to see in dim light, animals are dependent upon the plant pigment carotene.

Recently, it has become increasingly clear that the close association in plants of the carotenoids and chlorophyll is not coincidental. Pursuing lines of investigation sparked by striking similarities between the chemical structural formula of carotene and that of chlorophyll, plant biochemists have collected an impressive body of evidence suggesting that carotene is an ingredient in the natural synthesis of chlorophyll; specifically that one carotene molecule provides two of the straight chain (phytol) sections found in each chlorophyll molecule.

Blood is Thicker Than Water

All of the vertebrates — the fishes, amphibians, reptiles, birds, and mammals — have blood containing the red pigment hemoglobin. Indeed these complex forms of life could not exist without hemoglobin or some equivalent oxygen-bearing principle; for only



H. Armstrong Roberts

The yellow component of the frog's green skin, the red feathers of the robin, the yellow feathers of the canary, and the yellow of many bird beaks are produced by the carotenoids.

thus can sufficient oxygen be distributed to the tissues of the higher animals. The alternative would be the distribution of oxygen in simple aqueous solution in circulating body fluids; but a watery solution of oxygen can contain, at the most, only a fortieth of the amount of oxygen that blood can contain. Hemoglobin in the circulating blood takes up oxygen by direct chemical union. In the deoxygenated form, this pigment is purplish. This form of hemoglobin combines with oxygen to become the bright scarlet oxyhemoglobin. That is why, as every knowledgeable first-aid-er knows, venous blood is purplish whereas oxygen-rich arterial blood is bright red.

Besides the vertebrates, many lower animals have hemoglobin in their blood. But the octopus, the snail, lobsters, and crabs are aristocrats; they are blue bloods. Their blood is blue because its oxygen-bearing principle is a blue pigment called hemocyanin. The metallic element in hemocyanin is copper, instead of the iron of hemoglobin.

A small group of marine worms possess a blood pigment known as chlorocruorin, that has the fascinating property called "dichroism"; it is both red and green. In thick layers or in concentrated solution, chlorocruorin is red; it is green in thin layers or in dilute solution. Hence the blood vessels of these creatures, viewed under the microscope, appear either green or red according to their diameter. Finally, there is a rare pink, iron-containing respiratory pigment called hemerythrin, found in a few marine invertebrates. This completes the catalogue of oxygen-carrying biological pigments; and no colorless

substances having this biochemical property are known.

Many of the smaller invertebrates, creatures with relatively simple structure and function, get along without respiratory pigments. Their circulating body fluids can carry enough oxygen in aqueous solution. There are also transitional forms that possess hemoglobin, but use it only in an emergency. One of these is a tiny creature called the bloodworm, that actually is the larva of a midge, a minute fly. Bloodworms dwell in the mud at the bottom of lakes. So long as ample oxygen is available to them, the bloodworms rely upon simple solution to transport oxygen in their blood. But whenever the oxygen of their environment is sharply lowered, these animals bring their latent hemoglobin into play to make the best use of the scarce oxygen.

And colors in animals serve other essential functions in addition to that of transporting oxygen.

Bright Animals

The primary green of the plant world shows plainly on the outside; the forest wears its heart upon its sleeve. Not so the animal world; its primary red is hidden away inside each creature. Perhaps this is fortunate. Within the forest we are soothed by the murmur of "green" that surrounds us from the staid trees and other plants. Could we bear a world in which the animals, besides scurrying frenetically about as is their wont, also shrilled continuously "red! red! red!?"



H. Armstrong Roberts

The protective coloration of the grouse is so well contrived that the walker in upland forests is repeatedly startled when his approach causes a covey of these birds to explode from apparently a vacant spot.

But animals do have external colors, of great variety and often of great beauty. Animal colors either are due to pigments — sometimes made by the animals themselves but sometimes taken in with plants consumed as foods — or else are due to the physical structure of the external animal tissues.

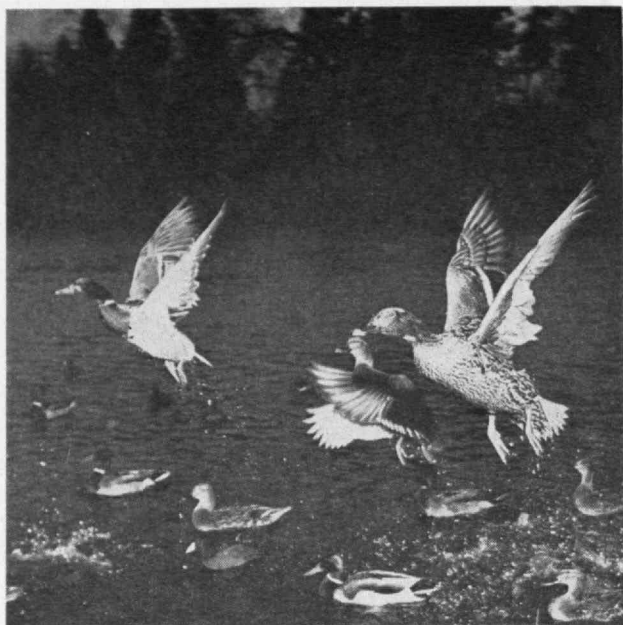
This latter structural coloration is of two sorts: Tyndall scattering and interference of light. John Tyndall demonstrated almost 100 years ago that the color of the blue sky is caused by the fact that fine particles in the upper atmosphere scatter, toward earth, more short rays than long rays of sunlight. The blue of human blue eyes is similarly due to light scattering; such eyes contain no blue pigment whatsoever. Tyndall scattering is responsible for the hues of blue feathers and green feathers in birds. This fact may be demonstrated by viewing a blue or green bird's feather by transmitted rather than reflected light; it then appears to be colorless. Red or yellow feathers, in contrast, owe their colors to the presence of pigments, and retain their colors whether viewed by reflected or by transmitted light.

The other type of animal coloration due to physical structure is iridescence, just like that of oil films floating on water or of soap bubbles. Such colors are caused by destructive interference of monochromatic components of white light, reflected from two superimposed surfaces. Examples of interference coloration in animals are peacock feathers; wing colors of flies, of many butterflies and moths, and of some beetles; and the mother-of-pearl lining of mollusk shells. As colors from interference films change according to the angle of incidence of the light and the thickness of the film, the animals just listed provide an ever-changing display of, literally, every color of the rainbow.

A butterfly's wing may be used to demonstrate categorically the fact that many of its colors are due to interference. The films involved here are layers of transparent wing scales. A drop of ether placed on such a butterfly wing fills in the air spaces among the scales and causes the colors to disappear; then as the ether evaporates, the gorgeous hues promptly return.

The remaining external colors of animals are, like those of the yellow and red bird feathers just mentioned, caused by pigments. Prominent among these pigments are our old friends the carotenoids. The robin's red feathers, the canary's yellow feathers, and the yellow beaks of many birds are colored by carotenoids. So are the yellow component of the frog's green skin; the orange of the goldfish and of the newt's belly; the pink of salmon meat and flamingo feathers; the green and orange of some crabs and the lobster's blue-green shell and red antennae. In these latter crustaceans, the carotenoids are chemically united with proteins. That is why a lobster turns red when it is boiled. The protein of blue-green carotenoid-protein complex is coagulated by heat, and the remaining free carotenoid is red.

We have previously stated that animals cannot themselves make carotenoids, but must get these substances from plants. This dictum is confirmed by observation of external animal colors. Thus trout obtain the pigment for their attractive red skin spots



H. Armstrong Roberts

With his iridescent head and snowy white necklace, the male mallard duck would never be confused with his drab-colored mate.

from fresh-water shrimps; the shrimps in turn get the carotenoid involved from the water plants on which they subsist. If captive trout are fed a shrimp-free diet, their spots fade. Similarly, wild flamingos obtain the pink for their feathers by eating shrimps. If kept captive and not fed shrimps, the flamingo's feathers come in snowy white after the ensuing molt has taken place.

Homemade Colors

But some animal pigments can be made by the animal organism itself. Hemoglobin is an outstanding example. Hemoglobin is continuously manufactured (in human beings principally in the marrow of the long bones where, in each person, some 30,000 red blood cells are made every second) and is continuously broken down to bile pigments, and mostly excreted in this form. But some bile pigments are used for colorful purposes; one variety gives blue birds' eggs their hues, another makes the bones of the garfish green.

Any observant naturalist has noted that green is almost as common among insects as among plants; grasshoppers and caterpillars are well-known examples. The insects' green is not, however, chlorophyll taken in with their food, as originally thought. It is a mixture of a yellow carotenoid that is derived from the insects' foods, with a blue bile pigment the insects produce themselves.

Another pigment the animal body can manufacture is melanin. Melanin is responsible for the black parts of salamanders, the color of crows and of black cats, for suntanning of white men's skins and for the color of negroes' skins. But all is not black with melanin; this pigment is also responsible for blonde human hair and the golden fur areas of cat-family members such as the ocelot. Melanin is made, stepwise, from the amino acid tyrosine found in proteins, with the

(Continued on page 104)

The Much Dreaded Red Cloak

Technology Alumni played a significant role
in the conquest of typhus fever in Serbia

by JAMES A. TOBEY

IN 1915 the final semester at M.I.T. was drawing to a close when an urgent telegram was delivered to Professor William T. Sedgwick, Head of the Department of Biology and Public Health. It came from Surgeon General William C. Gorgas; it asked how many expert sanitarians Sedgwick could recruit immediately for an important American Red Cross mission to Serbia. Sedgwick promptly answered that he thought he could furnish 10. Back came the reply, make it 15, and please make it fast. Sedgwick said he would, and he did, with help from Dr. Milton J. Rosenau of the Harvard Medical School and from George C. Whipple, Professor of Sanitary Engineering at Harvard and one of Sedgwick's first students, in the Class of 1889.*

Within two months or so a contingent of 26 physicians and sanitary engineers sailed on the *Athinia* for Serbia. Eleven of this carefully selected group were graduates of M.I.T., five more had taken work at the recently established (1913) Harvard-Technology School for Health Officers, two were from Harvard, and only eight represented other institutions. These public health experts were on their way to fight a wartime epidemic of a disease which always had been especially dangerous to those fighting it. In Serbia practically every doctor — only about 350 in all — had contracted the malady, and more than one-third (36 per cent) had died of it.

This dangerous disease was typhus fever, known in history as *El Tabardillo*, the Much Dreaded Red Cloak, so-called because of the characteristic red spots on the skin which resemble flea bites. The disease had begun to appear in the valiant Serbian Army in November of 1914 while it was engaged in repelling the invading troops of Austria-Hungary, an inva-

sion which had launched World War I about two months earlier. In this first campaign the Serbs were victorious, taking about 60,000 prisoners, fully one-half of whom succumbed to typhus fever in December and January. Whether the Austro-Hungarians brought the disease with them and gave it to the Serbs, or vice versa, is an open question, but it is probable that this malignant fever had been lying dormant in both countries and that wartime conditions sparked it into flame. At any rate, 2,500 typhus patients were admitted daily to the Serbian military hospitals, and at the end of six months more than 150,000 persons in that country had died of the disease. The mortality in this outbreak was exceptionally high — rapidly increasing from 20 per cent to 60 per cent of the cases. The members of that American Red Cross mission earned the medals they eventually got.

During the six months of this epidemic, Serbia was practically helpless, with its army absolutely immobilized, but Austria-Hungary dared not attack, realizing that typhus was holding the borders. This delay was undoubtedly favorable to the Allies and may well have been a factor in their ultimate victory. It was not until the end of 1915 that Serbia finally was conquered by a combination of Germans and Bulgarians along with the Austro-Hungarians. As had happened so often before in the stream of history, typhus fever had been a potent factor in influencing the course of human events.

In response to an urgent plea for help from the Serbian government, the United States, which was then neutral, organized the American Red Cross Sanitary Commission, under the direction of Dr. Richard P. Strong of the Harvard Medical School. Among the half dozen or more of his immediate associates were Edward Stuart, an M.I.T. graduate in sanitary engineering in the Class of 1910, and Dr. Hans Zinsser, then of Columbia University, whose fascinating book, *Rats, Lice and History*,† brought him well-deserved fame in 1935. The American Red Cross and half a dozen other nations, including Russia, also sent out hospital units to care for the legion of the sick. Two of the American physicians in charge of hospitals contracted typhus and died of it, and a number of others were afflicted but recovered. Among other Americans involved in this epidemic was the late Lieutenant Colonel Edgar Erskine Hume of the Army Medical Corps who later, in 1921, took a public health degree at M.I.T.; as a brigadier gen-

*Dr. Stanley H. Osborn, '15, State Commissioner of Health of Connecticut since 1922, was one of Sedgwick's men in Serbia. He kept a most interesting diary of 264 typewritten pages, profusely illustrated, which it has been the writer's privilege to read. Copies of this invaluable document on the Serbian epidemic of 1915 are also in the libraries of M.I.T. and the American National Red Cross. Dr. Osborn lists the following M.I.T. men with the Red Cross mission to Serbia: George W. Bakeman, '13, Ralph D. Bates, '14, Henry E. Berger, Jr., '15, Dr. Albert W. Buck, '13, Dr. Carl E. Buck, '15, Dr. Albert F. Cornelius, '15, Charles E. Fox, '14, Elliot H. Gage, '13, Joseph E. Harrington, '12, Dr. Estus H. Magoon, '14, Dr. Ralph W. Mendelson, '15, Dr. Harold H. Mitchell, '16, Dr. Stanley H. Osborn, '15, and Edward Stuart, '10. Albert and Carl Buck, Albert Cornelius, Charles Fox, Elliot Gage, Joseph Harrington, and Edward Stuart are now dead. Dr. Mendelson later went to Siam, where he was physician to the king; during World War II he and the writer served together in military government in Europe.

†Boston: Little Brown and Company, 1935



Photo by
Underwood &
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From Dr. Stanley H. Osborn, '15, comes this interesting view of members of the American Red Cross Sanitary Commission to Serbia, mentioned in Dr. Tobey's article. The photograph was taken aboard the S.S. Athina on May 15, 1915. The seven kneeling or sitting in the front row are (left to right): Dr. Albert W. Buck, '13 (then inspector with the Massachusetts State Board of Labor and Industries); Ralph D. Bates, '14; Stanley H. Osborn, '15 (who received his C.P.H. from M.I.T. a few weeks prior to usual commencement activities); Henry E. Berger, Jr., '15; George W. Bakeman, '13, in shade (then engineer for the State Board of Health of Massachusetts); Charles E. Fox, '14 (then assistant sanitary engineer, State Board of Health of Maryland); and George H. Hazelhurst, graduate of Rensselaer Polytechnic Institute and Harvard University.

Standing (left to right) are: E. D. Gayle (Sanitary Department, Isthmus of Panama); Francisco P. Bravo of Havana; Dr. Fleetwood Gruver of Nashville, Tenn.; George W. Taylor (Sanitary Department, Isthmus of Panama); Joseph E. Harrington, '12 (then graduate student at M.I.T.); Elliot H. Gage, '13 (then engineer for the State Board of Health of Massachu-

setts); Charles P. Crafts (Sanitary Department, Isthmus of Panama); Dr. Estus H. Magoon, '14 (then assistant in the Department of Civil Engineering at M.I.T.); Gerald F. Laughlin of Panama; Dr. Ralph W. Mendelson, '15, of Chicago; Major Robert U. Patterson, in straw hat (later Major General and Surgeon General, U.S.A., 1931-1935); Clement B. Chin (Sanitary Department, Isthmus of Panama); Edward Stuart, '10 (sanitary engineer for the Commission and on leave as Chief Engineer, State Board of Health of Oklahoma); Theodore R. Schoonmaker (sanitary engineer at Little Falls, N.J., and prior to sailing, at Baltimore, Md.); Dr. Carl E. Buck, '15 (then a special student at M.I.T.); Otis T. Campbell of Panama; Dr. Albert F. Cornelius, '15 (who, with Osborn, received his C.P.H. from M.I.T. in time to sail with awarded certificate); Dr. John S. Schmitt (then Acting Assistant Surgeon, U.S. Public Health Service); Dr. Harold H. Mitchell, '16; and Dr. Richard S. Lyman, '16 (in back of Mitchell and slightly to the right). Identification of persons was provided by Dr. Osborn, but professional affiliations, when known, were taken primarily from newspaper clippings of May, 1915.

eral in World War II he fought typhus in Naples in 1944, and as a major general and chief surgeon of the Far Eastern Command under MacArthur he fought it in Japan and Korea.

By August of 1915 the Serbian epidemic of typhus had run its course. The disease probably had used up its quota of susceptibles; although basically a cold weather malady, undoubtedly its passing was accelerated by the efforts of the American Red Cross Sanitary Commission. Only six years earlier, in 1909, a French scientist at the Pasteur Institute in Tunis, Dr. Charles Jean Henri Nicolle, had demonstrated that typhus is disseminated by the body louse. The

Serbian campaign, therefore, offered an opportunity for massive delousing, as well as for various other sanitary measures, which apparently were effective.

Although typhus waned in Serbia it traveled on to Poland, where it raged in 1916, and then passed on to Russia, whose army had been uniquely unsuccessful in World War I. After a disastrous retreat of the Russians in 1916, more than 150,000 cases of typhus were reported in that nation, but this was a mere drop in the bucket compared to what was to come. In the next five years, Russia is reliably estimated to have been devastated by no less than 25,000,000 cases

(Continued on page 96)

BUSINESS IN MOTION

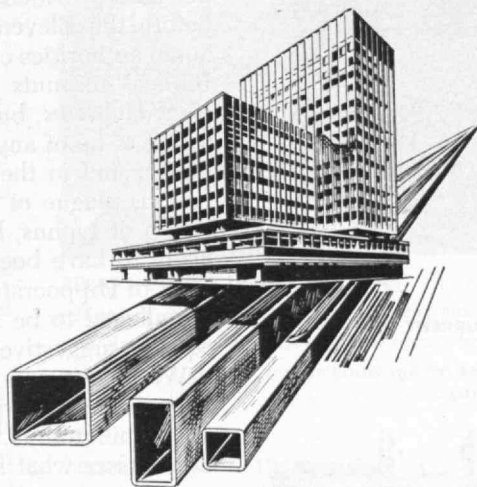
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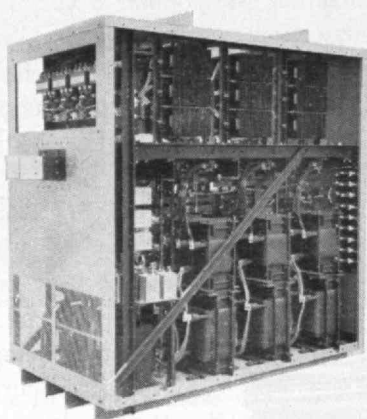
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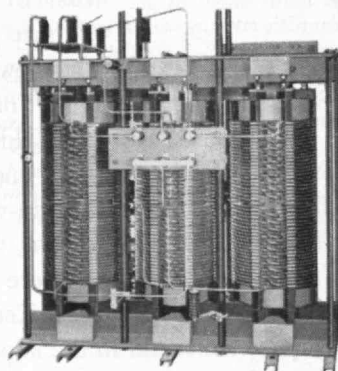
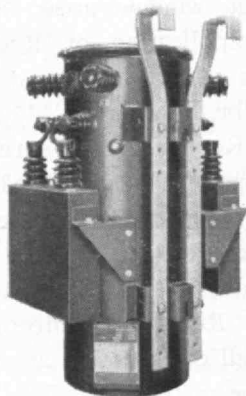
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MUCH DREADED RED CLOAK

(Continued from page 94)

of typhus, with at least 3,000,000 deaths. The Bolsheviks who had come to power in 1917 did not seem to be interested in assistance, or interference, from outside. Poland, however, was not yet contaminated with Communism and cordially received a typhus research commission of the League of Red Cross Societies in 1920. Under the direction of Drs. S. Burt Wolbach and John L. Todd, this commission made some noteworthy studies on the cause of the disease, which had been determined in 1916 to be a virus-like organism known as *Rickettsia prowazeki*, so-called after the American, Dr. Howard T. Ricketts who died in Mexico City of typhus in 1910, and St. von Prowazeki, who died of the same disease in Germany about four years later. They were only two of half a dozen scientists who had succumbed to typhus while investigating it.

The Antiquity of Typhus

The great antiquity of typhus has been proclaimed by a number of eminent medical historians, although persuasive evidence of the existence of the disease before the Eleventh Century is more than meager. Some authorities claim to find references to typhus in Biblical accounts of the many afflictions of the ancient Hebrews, but most of these references are too vague to be of any real diagnostic value. Others profess to find in the description of Thucydides of the famous plague of Athens in 430 B.C. a definite indication of typhus, but that epidemic was much more likely to have been smallpox.† Some of the case reports of Hippocrates, written in the Fifth Century B.C. are alleged to be suggestive of typhus, but they are equally suggestive of a number of other maladies.

When my previously mentioned friend, General Hume, was librarian of the Army Medical Library in Washington, D.C. in the mid 1920's, he dug up for Dr. Zinsser what seems to be the first known reference to typhus. According to an Italian writer named Pratillo, there appeared at the Monastery of La Cava near Salerno, in the fall of 1083, a severe fever which differed from the Pest (bubonic plague) in that it was accompanied by *peticuli*, or spots, and swellings of the parotid gland. This ailment was probably typhus, but the strange thing is that nothing more is heard of the disease for about four centuries, when it burst into full bloom in Spain.

Granada, last stronghold of the Moors in Spain, was besieged by the armies of Ferdinand and Isabella in 1489, but was staunchly defended by the fiery brothers Muley Hassan and Ez Zagal. When Don Fernando reviewed his troops in 1490 he found that 20,000 of them were missing from the rolls; of these, only 3,000 had fallen before the swords of the Moors. The remainder had succumbed to a mysterious and malignant spotted fever, a highly fatal disease which was believed to have been brought by Venetian soldiers from the Island of Cyprus; they in turn had

(Continued on page 98)

†Tobey, James A., "First Great Epidemic of History," *The Technology Review*, 58:407 (June, 1956).

Progress Works Here

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MUCH DREADED RED CLOAK

(Continued from page 96)

acquired the malady from the Turks. This epidemic held up the Spanish conquest of Granada until 1492.

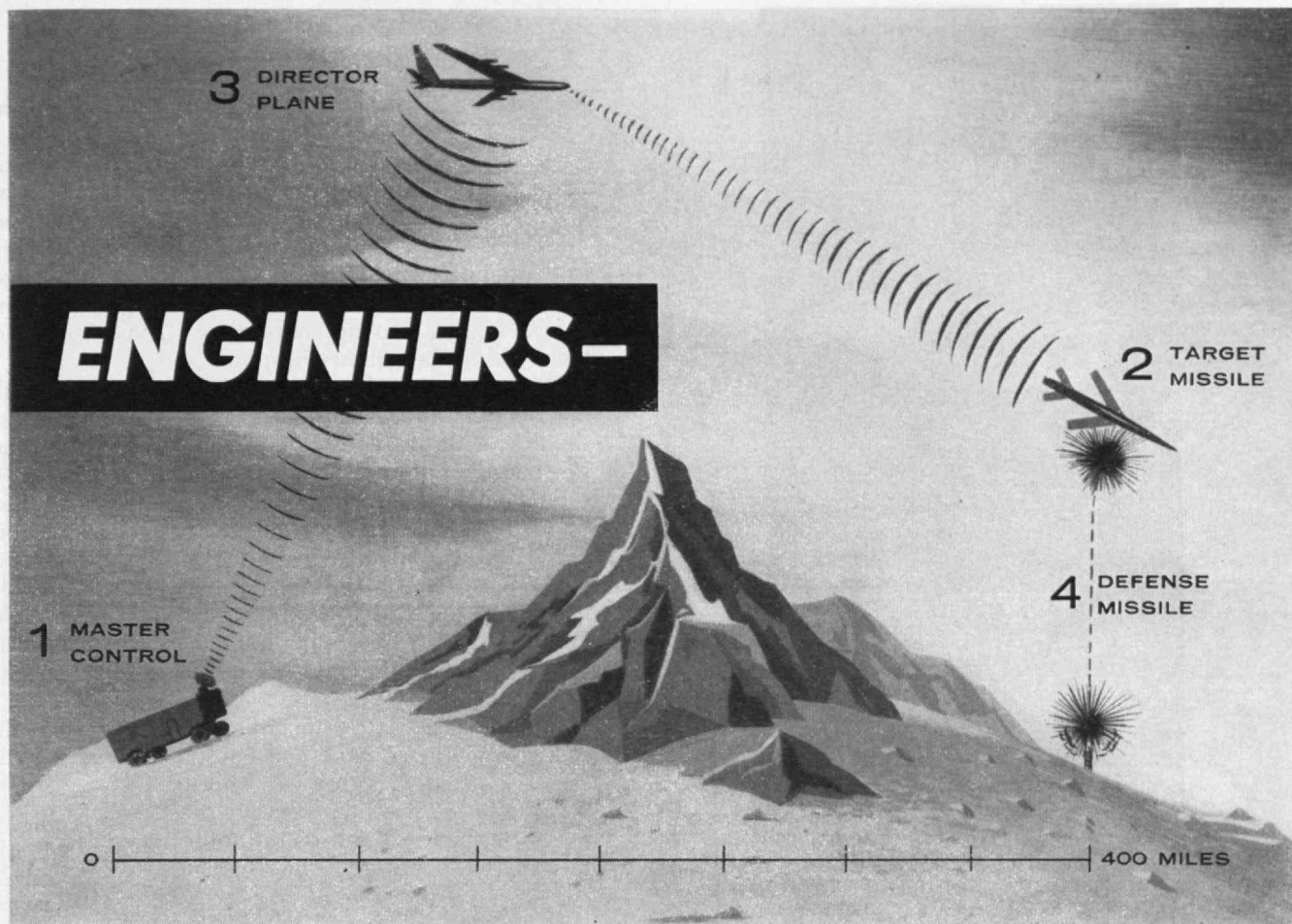
This epidemic also depopulated the whole Iberian Peninsula, raging intermittently for the next century. This series of early outbreaks was described in 1802 in a book on epidemic fevers by Joaquin Villalba, who said that the name *Tabardillo*, the Much Dreaded Red Cloak, was given to this pest in 1577 by one Luis de Toro, and that the disease was unknown before the siege of Granada. It was carried by the Spaniards to their newly acquired possessions in the Americas, where it ravaged Mexico City in the late Sixteenth Century. In 1570 the city physician there, Dr. Francisco Bravo, wrote a treatise on this spotted fever, which he called *Tabardete*. Until the end of the Eighteenth Century, when the name typhus (based on the Greek word meaning stupor) was adopted, the disease was known by a wide variety of names, including jail fever, famine fever, Hungarian disease, Irish ague, piper corn, *hauptkrankheit* (head sickness), and so on.

By whatever name it was known, typhus fever flourished all over Europe in the Sixteenth and Seventeenth Centuries. In 1528 a disastrous epidemic of this malady among the French troops at Naples enabled Charles V of Spain to emerge victorious from what had looked like a hopeless situation, and to get himself crowned as Roman emperor. In 1552, however, a terrible outbreak of typhus in his own forces at his siege of Metz balked Charles and compelled him to retreat. In 1566 the Emperor Maximilian II, son-in-law of Charles, marched into Hungary to do battle with the Turks, but his army was decimated by typhus, and the Hungarians had to continue to pay tribute to the Sultan. In the reign of Good Queen Bess in England, in 1577, typhus broke out following a trial at Oxford, killing the judge, the sheriffs, the bailiffs, and many of the spectators at this event, which came to be known as the "Black Assizes."

The Thirty Years War, from 1618-1648, which began as a religious conflict and ended as a political one, with Catholics and Protestants on both sides, was a series of massacres, sieges, and atrocities, invariably accompanied by famine and pestilence, in which typhus fever played a dominant part for the first 12 years, and then bubonic plague took over. In 1632, for example, when the gallant Gustavus Adolphus of Sweden was besieging Nuremberg, an epidemic of typhus, mixed with other diseases, caused 29,000 deaths on both sides. Fifty years later, in 1683, Austria was overwhelmed by typhus during the siege of Vienna by the Turks; here and in Hungary, the Balkans, and Russia the disease became so firmly implanted among the inhabitants that it remained to harass them down to, during and after World War I.

Napoleon and Typhus

This residue of typhus in Russia was one of the important factors in frustrating the grandiose schemes of a certain Corsican adventurer. In 1811
(Continued on page 100)



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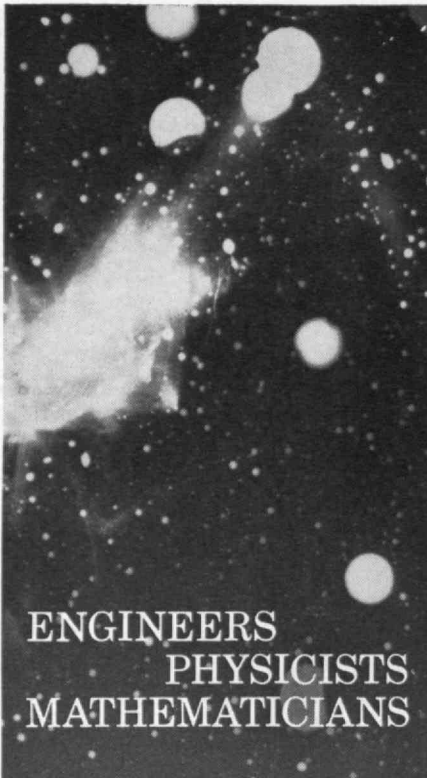
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MUCH DREADED RED CLOAK

(Continued from page 98)

the vainglorious Napoleon Bonaparte decided to invade Russia, assembling for this noble purpose a grand army of half a million men from 20 different nations. After a year of preparation, this huge force crossed the Niemen River in June of 1812 and started on the long road to Moscow. Bonaparte arrived there in September with one-fifth of the original army, to find the city in flames. On October 19 the return march began, leaving more than 15,000 sick and wounded in the military hospitals.

When the French Army staggered into Smolensk on November 9 it consisted of some 40,000 men, less than one-half of the force that had left Moscow; the rest had died on the way. At Vilna, on December 10, the fierce Cossacks swooped down and captured 30,000 of the ill-clad, half-starved soldiers who could go no farther; practically all of them died in prison of the jail fever. When Marshal Ney, the "bravest of the brave," finally delivered the remnants of this once grand army to Napoleon, who had left his troops in the lurch and returned secretly to Paris, it was literally a mere handful.

Historians attribute this disaster to the terrible Russian winter and the constant raids by the ferocious Cossacks, but that was only part of the story. Typhus fever, dysentery, scurvy, and other diseases took a tremendous toll of the unfortunate troops in this ill-fated venture. The Russians were not un-

(Continued on page 102)



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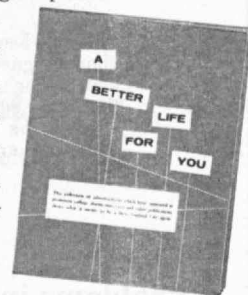
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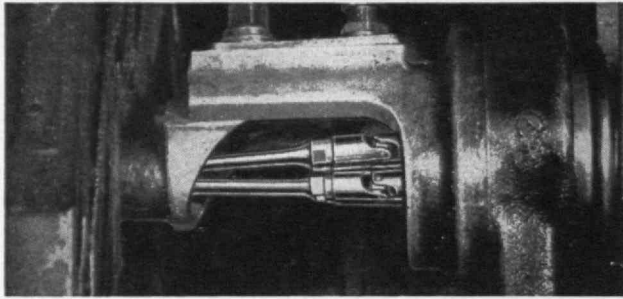
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MUCH DREADED RED CLOAK

(Continued from page 100)

scathed, either; during their pursuit of the French, from October to December, it is reported that they lost 62,000 men from typhus, which they called the "nerve fever," and from other maladies. Nothing daunted by this inglorious defeat, Napoleon raised another grand army of 100,000 within a year, but things went badly and he ended in exile at Elba in 1814. He returned for a hectic hundred days, to be beaten by Wellington at Waterloo; he spent the remainder of his life at St. Helena, dying there in 1821, probably of an intestinal cancer.

Despite the great prevalence of typhus in Europe and the flow of immigrants to America, typhus never gained much of a foothold in the United States. There was an outbreak in Philadelphia in 1836, which was investigated by Dr. William W. Gerhard, who was the first to differentiate typhus from typhoid fever, a disease with somewhat similar symptoms but an entirely different cause, a bacillus which was discovered in 1884. Typhus, always rife in armies, played no conspicuous part in our Civil War, although a few hundred deaths from this cause were reported, possibly because of confusion with other diseases. In World War I, the presence among our troops of the ubiquitous cooties did not lead to the spread of typhus, although other ailments caused by *Rickettsia*, such as trench fever, were common. At the end of the Nineteenth Century, cases of a peculiar fever were noted among immigrants in New York and Boston, a fever which came to be known as Brill's disease. Subsequent investigations showed it to be a milder form of typhus, spread not by the body louse but by the rat flea and the rat louse.

Typhus fever was, however, responsible for a significant epidemic in Naples during World War II, which might have had serious consequences if it had not been brought under control. Cases began to appear in this crowded and damaged city in October of 1943, about the time when the Allied Military Government took over. By January of 1944, when I was there, more than 1,000 cases had been reported in the civil population. The higher military authorities, with characteristic ineptitude, did not realize the importance of this outbreak, but the military governor in Naples, the late General Hume (mentioned earlier in this article), was also a medical officer and he managed to convince even higher authorities that something had better be done, and quickly. With the assistance of the U.S. Typhus Commission, which had

(Concluded on page 104)



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MUCH DREADED RED CLOAK

(Concluded from page 102)

headquarters in Cairo, medical and sanitary teams were organized and put to work. During the winter of 1943-1944 more than a million verminous Neapolitans were dusted with the new insecticide, DDT, while careful case finding, isolation, and other measures were also adopted. By the end of March the epidemic had been vanquished. All American troops, by the way, had been immunized against the disease and thus were protected. If this outbreak had gotten out of hand, it might have had a substantial effect upon our military progress.

"Typhus," wrote Dr. Hans Zinsser in 1935, "is not dead. It will live on for centuries, and it will continue to break into the open whenever human stupidity and brutality give it a chance, as most likely they occasionally will. But its freedom of action is being restricted, and more and more it will be confined, like other savage creatures, in the zoological garden of controlled diseases."§ What Dr. Zinsser wrote nearly a quarter of a century ago is true today.

§Zinsser, Hans, *Rats, Lice and History*, page 301 (Boston: Little Brown and Company, 1935).

LIFE IS COLORFUL

(Continued from page 92)

aid of a specific copper-containing enzyme. Lack of this enzyme causes albinism, a condition not uncommon in vertebrates of all sorts.

There are at least several additional chemical groups — pterins, porphyrins, and others — that are important in the external colors of animals, but these can scarcely be described in a brief discussion like this one. Suffice it to point out that an external red color in animals may have as many as six different causes. Carotenoids produce reds in sea anemones, crabs, trout, and flamingos; hemoglobin gives earthworms their color. Pterins produce reds in butterflies and frogs; a porphyrin lends this color to some bird feathers; a substance called "echinochrome" makes sea urchins red. Finally, in beetles, red can be a structural color.

What's the Use?

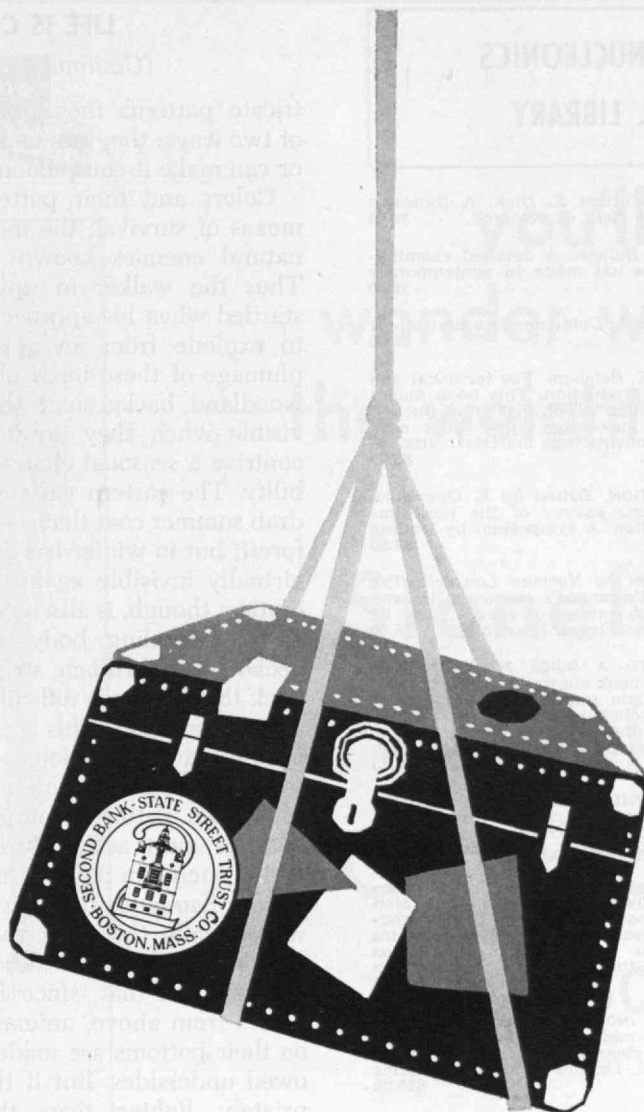
The aesthetic value of the animal colors we have been discussing need not be belabored. But what is their utility? These colors, and the varied and in-
(Continued on page 106)

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LIFE IS COLORFUL

(Continued from page 104)

tricate patterns they provide, are useful in either of two ways: they can make an animal inconspicuous, or can make it conspicuous.

Colors and their patterns provide to animals a means of survival; the method of concealment from natural enemies known as "protective coloration." Thus the walker in upland forests is repeatedly startled when his approach causes a covey of grouse to explode from an apparently vacant spot. The plumage of these birds blends so perfectly with the woodland background that they are well-nigh invisible when they are motionless. Some creatures contrive a seasonal change in color to minimize visibility. The eastern varying hare, for example, has a drab summer coat that serves to conceal it in summer forest, but in winter has an immaculate white pelage virtually invisible against the snow. Protective coloration, though, is also achieved by confusing, as well as by concealing, body outlines. Thus the Malayan gecko has a brilliant stripe down the center of its back that makes it difficult to identify in its customary surroundings. This is called the "dazzle" principle of protective coloration.

Another principle of protective coloration is that of broken pattern, epitomized by the zebra. This beast is most active during the hours of twilight; and in such dim light its markings, that in a zoo cage appear flamboyantly showy, serve to conceal it very well. Finally, there is Thayer's principle of protective coloration. The artist Abbott H. Thayer was the first to point out that, since light in the forest usually comes from above, animals as dark on their tops as on their bottoms are made prominent by their shadowed undersides. But if the lower surface is appropriately lighter than the back, unevenness in lighting is offset and the animal blends into its background. Thayer's principle may be demonstrated by noticing how many mammals, birds, reptiles, amphibians, and insects have underparts lighter than their backs. So much for the value of color in making animals less conspicuous; what about the reverse?

Sex in Technicolor

If this article had been prepared for a periodical of general circulation, it probably would have been advisable to capture the readers' interest by putting a little sex into the opening paragraphs. As it is, we
 (Concluded on page 108)

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LIFE IS COLORFUL

(Concluded from page 106)

do not reach this topic until our conclusion. For color as a secondary sexual characteristic, and its importance in mating and reproduction, is the final phase of this discussion.

A leading humorous magazine once published a cartoon showing two turtles meeting and one saying to the other, "I'm a girl." This dilemma would never face, say, the mallard ducks, for the male of this species with his iridescent head and snowy white necklace could never be confused with his drab-colored mate. Color is a big element in the courtship displays of some animals. The peacock puts on a famous show. Even the lowly pigeon makes the most of his limited spectrum by puffing up his throat and spreading his tail. When the male man-of-war bird makes love he inflates dazingly red throat pouches, and the male prairie chicken makes similar use of bright orange air sacs.

The carotenoids, on which we have touched so many times, are found in high concentration in the reproductive organs of numerous animals and plants; in eggs, in gonad glands, in pollen, in fruits. Whether the carotenoids serve any direct function here is not known; they may accumulate in sexual organs simply because these organs are high in fat, and carotenoids are fat soluble. Whether useful or not, the carotenoids produce some dramatic displays in connection with reproduction. The brilliant blue of barnacles, as already mentioned, is located in the gonads of these creatures. When a particular snail spawns, the male gonads turn a brick red while the female gonads lose carotenoids and become pale.

Thus it seems abundantly clear that without its myriad colors, life would not just be dull — it would be impossible.

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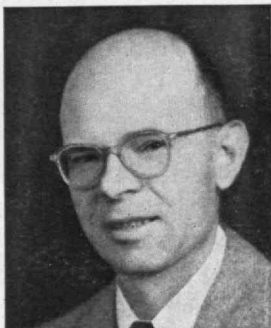
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BORN: May 4, 1909.

EDUCATION: Iowa State Teachers' College, B.S., 1934;
M.S., 1948.

PREVIOUS EMPLOYMENT: Principal, High School—Sep-
tember, 1935—June, 1941. Industrial Arts Teacher and
Audio Visual Coordinator, September, 1941—June, 1954.

REMARKS: It was on June 16, 1954, that former High School Principal, Harold McKnight, became a New York Life representative. And ever since then he has applied the same enthusiasm toward helping people plan lifetime financial security as he did toward helping teen-agers chart lifetime careers. His sincere interest in and constant attention to his clients' insurance needs have given Mr. McKnight a successful head start on his own lifetime career. In his first year, after joining New York Life, he qualified for the Company's Star Club—an organization composed of sales leaders from among New York Life's more than 7,000 representatives. With such a beginning, it seems certain that Harold McKnight can expect to add many similar honors to his record as a New York Life representative.

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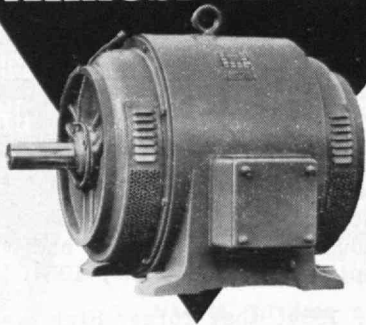
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TREND OF AFFAIRS

(Continued from page 82)

they went down fighting. No coach could ask more of a team than that.

Lacrosse

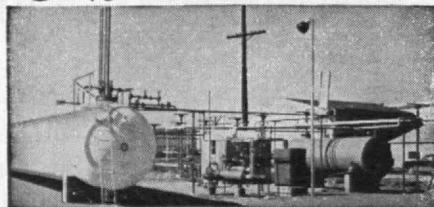
Despite bad weather which limited our practice, we won our first game—a scrimmage with St. Marks—by one goal, 8-7. What we lacked in practice and ability, we made up with enthusiasm and drive. The entire season was marked with steady improvement and development of fundamental skills, and in the later games, we were an integrated team, not just a group of boys. The team developed a unity which served it well in making this the most successful season ever for freshman lacrosse at M.I.T., having won more games than we lost. The record was 5-4.

Some of the outstanding games were the 7-6 loss to Harvard, the 12-0 defeat of New Hampshire, the 8-3 defeat of Tufts, the excellent game played against Andover, holding them to a 3-2 score in the first half, before the roof fell in—11-3 final score. The game against Lawrence Academy, played in the pouring rain, was a thriller. It was an overtime game, the final and winning goal being scored in the last minute of the second overtime period. A most exciting game and a good win, 10-9.

There is no question in my mind that this freshman team will add substantial strength to the varsity next

(Continued on page 112)

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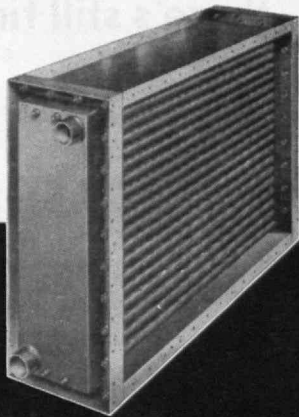
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TREND OF AFFAIRS

(Continued from page 110)

year. As a coach, it has been a most satisfying experience, and as a team, I could not have hoped for better results; the improvement, skill, enthusiasm, and spirit shown throughout the season were very gratifying.

Tennis

The 1958 M.I.T. tennis team opened its season with a southern trip during spring vacation. Matches were played against Quantico, Wake Forest, Maryland, and Howard. The southern trip affords the players a good chance to prepare for the season in a relaxed atmosphere without the pressure of daily school work.

After our return from the South, we had our first match against a very strong Harvard team. I feel that special mention should be made of our matches with Williams, Wesleyan, and Dartmouth. We lost to Williams 7-2, but did very well in winning the Number One Doubles and the Number Four Singles. Against Wesleyan and Dartmouth we lost 9-0 and 8-1, but the matches were closer than the team score indicates, as many of the individual matches were quite close.

The team showed a definite improvement over last year despite the loss of Richard H. Hough, '58, our Captain-Elect and Number Two man. The new
(Concluded on page 114)

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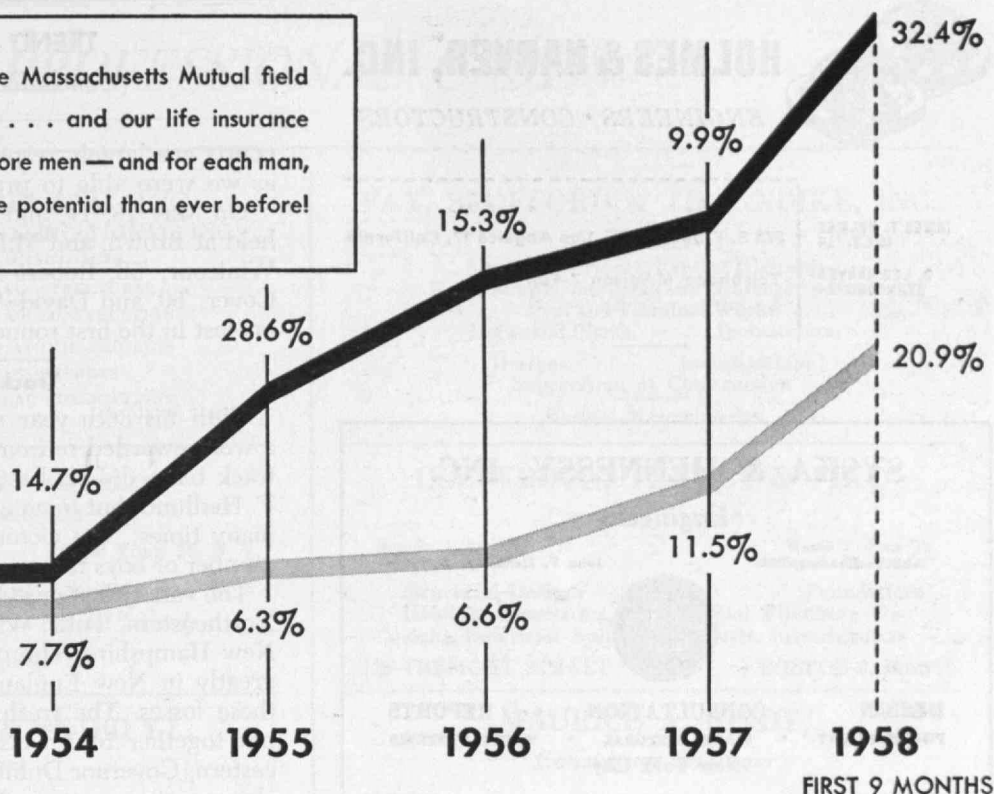
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TREND OF AFFAIRS

(Concluded from page 112)

courts are largely responsible for our improvement, as we were able to practice much more efficiently.

On May 16, 17, and 18 the New England's were held at Brown, and M.I.T. sent four men: Jeffrey H. Winicour, '59, Robert A. Kenefick, '59, Thomas M. Cover, '60, and David A. Aaker, '60. All of our players lost in the first round of the Singles.

Track and Field

With his 36th year at M.I.T. coming to a close, a well-rewarded retirement awaiting him, the M.I.T. track team did its best to earn a victory for Oscar F. Hedlund, but to no avail. But, as Oscar has said so many times, "the victories are fine, but the over-all number of boys taking part is more important."

The varsity lost meets to such worthy opponents as Northeastern, Tufts, Williams, Brown, Bowdoin, and New Hampshire. The caliber of track has increased greatly in New England so there is no disgrace in these losses. The freshmen, however, were able to put together four wins over Moses Brown, Northeastern, Governor Dummer, and Tufts, and lost three close-scoring meets to Brown, New Hampshire, and Andover.

Captain Glenn E. Bennett, '58, William F. Duffy, '59, and Larry R. Martin, '60, were the point winners in the middle distances for the varsity. Roxy E. Ernsberger, '58, Larry W. Lassinger, '58, and Edwin C. Bell, Jr., '58, took charge of the high and low hurdles. Richard L. Murdock, '58, one of New England's best, did very well in the 440. The two-milers were Roderick D. Swift, '58, and Duncan Ewing, '58. Nathan A. Liskov, '60, Robert P. Barrett, '60, two sophomores, and senior Thomas A. McClimans, '58, all scored heavily in the pole vault. The weight men who carried the load all the way were James R. Long, '60, Gary J. Fallick, '58, and Captain-Elect William J. Nicholson, '60.

Outstanding for the freshmen were Donald G. Morrison, '61, Dan R. McConnell, '61, Garrick A. Gustafson, '61, George L. Withbroe, '61, Richard F. Otte, '61, Raymond B. Landis, '61, Herbert Wegener, '61, Herbert H. Grieves, '61, Brian E. White, '61, Harold G. Snyder, '61, Mannie Smith, '61, and Captain Joseph T. Davis, '61. The varsity awaits them.

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and the prophet replied:
*"It is well to give when asked, but it is
better to give unasked, through understanding."**

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The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

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* "The Prophet" by Kahlil Gibran

ALUMNI AND OFFICERS IN THE NEWS

Changing Berth . . .

In addition to the 21 on page 79, other appointments, elections, and promotions have occurred as follows:

DAVID E. WAITE'17 and JOHN B. BECKWITH '58 as a member of the factory manager's staff to work on special assignments and as engineering manager, respectively, Wallace Barnes Division, Associated Spring Corporation, Bristol, Conn.... HERBERT K. FAIRBANKS'20 as consulting civil engineer, Ebasco Services, Inc.... SAMUEL SCHENBERG'20, as science director, New York City school system;

FRANCIS T. HILL'21 as resident manager, Moryland Casualty Company, Boston... LLOYD E. RAYMOND'22 as senior processing engineer on the staff of the vice-president, Singer Manufacturing Company... WILLIAM WRAITH, JR., '26 and THOMAS K. GRAHAM'35 as metallurgical manager and assistant metallurgical manager, respectively, The Anaconda Company;

EDWARD H. WELLS, JR., '27 as assistant general manager, Packing and Friction Materials Division, Johns-Manville Corporation... WILLIAM E. SKELTON'32 as assistant supervisor of asphalt research, Research Laboratories, The Texas Company, Port Arthur—Port Neches, Texas;

FREDERICK L. KILBOURNE, JR., '34 as manager, Barberton, Ohio, operations, Midwest Rubber Reclaiming Company... JOHN L. FULLER'35 as assistant director for training, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine... GEORGE E. VALLEY, JR., '35 as director of development planning, Melpar, Incorporated,

CORNELIUS J. WILSON'35 as eastern regional engineer, B.I.F. Industries, Incorporated, Providence, R.I.... HOMER R. OLDFIELD, JR., '38 as general manager, a new company component, General Electric Company, Phoenix, Ariz.... PAUL N. STANTON'39 as manager, Machine Tool Division, Clearing Machine Corporation, U. S. Industries, Incorporated, Chicago;

FREDERICK J. PORT, JR., '40 as general manager, Automotive Division, Electric Storage Battery Company, Cleveland, Ohio... KENNETH G. MCKAY'41 and JOHN A. HORNBECK'44, as director of development of components and solid state devices and director of electron tube and transistor development, respectively, Bell Telephone Laboratories... JOHN W. MEIER'41 as development engineer, Hamilton Standard division, United Aircraft Corporation;

JAMES S. BURNS, JR., '42 as junior specialist, atomic drafting section, Central Technical Department, Bethlehem Steel Company, Quincy, Mass.... ROBERT C. SEAMANS, JR., '42 as chief engineer, Missiles Electronics and Controls Department, Defense Electronic Products Division, Radio Corporation of America;

LEWIS W. MCKEE'44 as chief product engineer, Engineering Department, the Barden Corporation, Danbury, Conn.... PETER L. QUATTROCHI'44 as manager of customer services, Taco Heaters, Inc., Cranston, R. I.; ARTHUR F. HELIN'47 as staff specialist, Plastics Research Department, Spencer

Research Center, Spencer Chemical Company, Kansas City, Mo.... ALBERT E. HYLAS'47 as engineering section head for system development, Search Radar Engineering Department, Surface Armament Division, Sperry Gyroscope Company... ARMAND V. FEIGENBAUM'48 as manager of Manufacturing Operations and Quality Control Service, General Electric Company, New York City;

RONALD J. R. KALLMAN'48 as western regional manager for Transac computer systems, Government and Industrial Division, Philco Corporation... ROBERT W. FURMAN'50 as director, new department of research and development, Cargocaire Engineering Corporation, New York... HAROLD J. CLEARY, JR., '51 as plant metallurgist, Massachusetts Steel Treating Corporation;

MAX M. ULRICH'51 as general manager of advertising and industry research, Consolidated Edison Company of New York, Incorporated... HORACE H. SQUIRE'52 as associate dean, Worcester Junior College evening college.

Obituary

WILLIAM PROCTER'88, October 1
JOHN C. E. DE BULLE'90, September 11
HERBERT G. FAIRFIELD'92, October 3*
JOHN F. LINDER'92, November 1, 1955
NATHANIEL H. MORISON'94, November, 1957
ABRAM GARFIELD'96, October 16
JOSEPH L. STURTEVANT'96, October 16
THOMAS R. WEYMOUTH'97, September 22*
GEORGE T. COTTLE'98, October 27
RAYMOND M. HUGHES'98, September 22
KENNETH M. BLAKE'99, October 18
MISS JANE R. CUTLER'99, July 18
JEROME P. JACKSON'99, September 14
ROBERT S. BLAIR'00, October 13
ARTHUR LITTLE'01, September 25*
ROBERT L. WILLIAMS'01, October 16
CLARENCE M. ALLEN'02, September 17
BENJAMIN F. C. HAANEL'02, April 24
AARON SCHWARTZ'02, August 7*
GEORGE H. DONHAM'03, October 9
BERNARD W. LATHAM'03, September 23
EMMOR H. MILLARD'03, October 28
THOMAS E. SEARS'03, October 18*
GEORGE W. SWETT'03, September 30*
CHARLES W. HOY'04, May, 1958
JAMES E. BARLOW'05, October 3*
ALBERT C. DICKERMAN'05, September 17*
THOMAS W. ESTABROOK'05, September 16*
JOSEPH C. FIELD'05, October 19
EDWARD F. MOODY'05, September 11*
HENRY B. SIEBRECHT'05, April, 1957
HOWARD P. ADAMS'06, no date given
HERBERT W. DEAN'06, August 17*
ARTHUR E. FEELEY'06, December, 1956
JESSE W. G. HANFORD'07, July 17
JAMES G. MOORE'07, September 9
ADOLPH ZUEST'07, July 16
GEORGE N. VARNEY'09, December 11, 1955
SAMSON K. COHEN'10, September 30*
LOUIS O. FRENCH'10, May 19*
FRANK C. HEARD'10, May 1*
HARRY G. KNOX'10, October 29
WILLIAM L. SMITH'10, May 22
JOHN R. BOWMAN'11, August 26*
GEORGE L. PAULLIS'12, July 16*

WILLIAM E. HERRON'13, September 25
FRED L. RAND'13, May 7, 1957
PHILIP M. CURRIER'14, June 20, 1955*
MYLES S. MAXIM'14, October 19
WARREN AMES'16, September 12*
WILLIAM G. BROWN'16, September 26*
EARL L. HAUMAN'16, August 26*
PING Y. LOO'16, October 13
WILLIAM L. OGDEN'16, August 6*
FRANK MAGUIRE'17, October 20
HENRY M. BARBER'18, no date given*
JOHN H. EARL'18, January 3
EDWIN S. FIELDS, JR., '18, 1950*
STANLEY H. FRANKLIN'18, June 16*
EDWARD B. MCCARTHY'18, May 26*
SAMUEL MANN'18, September 6*
RAYMOND P. MILLER'18, August 2*
JOSEPH E. ROY'18, July 23*
GEORGE G. FLEMING'19, August 31*
MALCOLM R. MCKINLEY'19, October 9
ARTHUR F. WILLIAMS'20, September, 1958
JOSEPH G. HAUBER'21, September 28
WILLIAM A. CAULDWELL'23, 1956
E. BARNES HOPKINS'25, August 18*
JOHN H. ROUNTREE, JR., '25, July 25*
F. TREVOR HOGG'26, September 18*
CHARLES T. SHEA'26, September 30
JOHN B. MCCARTHY'29, spring, 1958
ALFRED N. WELLS'29, February 20, 1957
BRYANT F. KENNEY'30, July 14*
EGERTON E. SMITH'30, June 9
GEORGE A. PIPPY'31, August 11
GILBERT F. TYLER'32, June 8
WILLIAM T. HANLEY'33, March 3*
LAWRENCE E. HOVICK'35, March 27
GERHARDT N. PATITZ'35, April 11*
HENRY F. BAKER'39, July 28*
WILLIAM W. BROWN'42, November 19, 1957
VICTOR S. CARMONA'43, September 22, 1957
CARL THOMSEN' 48, May, 1958
FRANK A. TUDINO'53, August 3*
*Further information in Class Notes

Observing Birth . . .

Among the Alumni celebrating birthdays during December are FRANCIS C. WILLIAMS '84, who will become 95 on the 5th; three who will turn 90; seven who will become 85; and nine who will be 80, as listed below with dates of birth:

December, 1868—MISS HELEN E. KEEP '97 on the 10th; JOSEPH N. GREENWOOD'89 on the 29th; and COURTLAND R. DARROW '93 on the 31st.

December, 1873—FREDERICK W. DAMON '96 on the 1st; CARL W. SHARER'97 and GEORGE L. SMITH'98 on the 2d; DEAN B. STOUGHTON'96 on the 6th; WALTER M. STEARNS'96 on the 7th; MORITZ SAX'96 on the 18th; and MILES E. BROOKS'00 on the 26th.

December, 1878—JEREMIAH COLMAN'01 and SIDNEY M. HENRY'05 on the 2d; HOLDEN C. RICHARDSON'06 on the 7th; WILLIAM C. CLARKE'00 on the 12th; WALTER U. JENNINGS'00 on the 13th; EDWARD W. WHITE'04 on the 17th; WILBUR S. BARKER'03 on the 21st; JOHN BOYLE'01 on the 30th; and PHILIP R. WHITNEY'02 on the 31st.

With the addition of these, the rolls of the Alumni Association will include a total of 75 living nonagenarians and, in addition, 730 octogenarians.

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Boston Luncheon

On October 16, at the first fall meeting of the Downtown Luncheon Club at Boston's Union Oyster House on Union Street, William H. Radford '32, Associate Director of Lincoln Laboratory and Professor of electrical communications, gave a panoramic view (within the limits of security) of the Laboratory's work, its status in M.I.T.'s research program for the military services, and the current shift of emphasis away from operational responsibilities and towards basic research and early development of advanced systems. Chairman Parke D. Appel '22 presided; about 80 Alumni and guests were present.

Professor Radford first described the Lincoln facilities at the Hanscom Air Field and outlined the function of the Laboratory, operating under an Air Force contract with M.I.T. on research and development directed towards improvement of communications and electronics for continental air defense. The Laboratory is supported jointly by the Army, Navy, and Air Force. Professor Radford then showed slides of outside field stations which are used to support some of the Laboratory's experimental work and discussed the SAGE air defense system, in the development of which the Lincoln Laboratory has played a vital part.

Especially interesting from the research standpoint was the installation at Round Hill in South Dartmouth, Mass., where a great deal of M.I.T.'s research activity in electronics and communications has been conducted off and on for more than 30 years. Scatter transmission research is currently a significant part of the Lincoln program here.

At Millstone Hill in Westford problems of ballistic missile defense are studied, and U.S. and U.S.S.R. satellites are tracked. This installation has elaborate instrumentation, a special transistorized digital computer, and many advanced components.

Other installations shown included rigid radome testing at the top of Mt. Washington in New Hampshire, where wind resistance problems are severe; radar facilities in Bath, Maine, and on Boston Hill in North Andover, Mass. The special significance of each was mentioned. Professor Radford pointed out that Lincoln Laboratory has a scientific and engineering staff of 720 from colleges in 46 states and 19 foreign countries. M.I.T. men constitute about 25 per cent of this group. Total personnel, including mechanics, draftsmen, other service people and guards, approximate 2,100.

Looking to the future, Professor Radford told of a news release last August to the effect that the Air Force is undertaking the complicated tasks of SAGE and air defense ground environment systems management through a newly organized Air Defense Systems Integration Division (A.D.S.I.D.). A nonprofit corporation called Mitre Cor-

poration has been sponsored by M.I.T., the initial nucleus of which is to be staffed in part from present Lincoln personnel working on the SAGE system, and is to be "principal systems adviser" to A.D.S.I.D. Mitre Corporation's board of trustees is headed by H. Rowan Gaither, formerly Chairman of the Board of the Ford Foundation and former Assistant Director of the M.I.T. Radiation Laboratory. Mr. C. W. Halligan, Director of Military Engineering at Bell Telephone Laboratories, will be Mitre Corporation's president. Formation of the Mitre Corporation evolved from several years of study at highest levels in Washington. Following the reports of several special military-civilian committees studying current and future needs for managing the complex air defense effort, Secretary of the Air Force James H. Douglas invited M.I.T. to assist in this joint military-industry effort for air defense systems.

Basic research must have increasing attention if continental defense is to keep abreast of newest developments in rockets, ballistic missiles, and other weaponry with its high altitudes, high speeds, and long ranges. Much needs to be learned about transistors and microwave devices, about storage and processing of information. With progressively more complicated systems, the man-machine relationship is lagging behind the theoretical capabilities and requires serious study to develop better use of computer capabilities.

The Lincoln Laboratory is already in the progress of change towards a program of reorientation, according to Professor Radford. When its SAGE tasks have been transferred to the Mitre organization, Lincoln Laboratory will be able to concentrate its efforts on its basic mission of research in air defense electronics and related fields, and the early development of advanced systems emerging from such research.—EDWARD B. HUBBARD '31, *Secretary*, 56 Sunset Road, Weston 93, Mass.

Central New York

The first official meeting of the Club was held on October 2, when we all toured a local brewery before going out to dinner. None of us knew much about the art of brewing beer so we learned a great deal, and we got all the beer that we could drink in the process. Following the dinner, we watched a short movie of the launching of the Atlas missile. In a short business meeting held during the evening, the program for the year was outlined. Future plans call for a tour of an air base including a jet aircraft squadron scramble, a dance, and several interesting talks. The dinner was attended by Bud West 2-'44, Greg Gebert '50, Paul Ostergaard '49, the club officers; and Pete Boucheron, Jr., 2-'44, Don Duecker '50, Ed Gruppe '22, John McGrew '54, Ray Morehouse '42, Ed Moyer 2-'44, Abe Prankioff '53, and Bill Schuler '32.

Before the actual season got underway, the club officers and the members of the educational council entertained the four freshmen from our area at a dinner. There

they were primed with advice on how to get along at the Institute in class, in part-time jobs that are available, and the recreation facilities in Bean Town. Also some of the escapades that Tech students manage to get into during the years of learning came in for an airing as we reminisced on our own school days.

One of the four freshmen, Bill Allison, was awarded the first scholarship from the M.I.T. Club of Central New York Scholarship Fund. From all appearances our money seems to be very well spent, so won't you consider designating your contribution to the Alumni Fund for the M.I.T. Club of Central New York Scholarship Fund? Both your Class and the Club will receive credit.—PAUL B. OSTERGAARD '49, *Secretary-Treasurer*, 111 Sherbrooke Road, East Syracuse, N. Y.

New Mexico

M.I.T. Regional Conference preparations are proceeding at a hectic rate. A successful conference is assured by the hard work of committee members F. J. Given '19, Chairman; F. C. Alexander '32, Vice-chairman; B. L. Basore '52; E. Edmunds, Jr., '42; M. L. Ilfeld '24; F. L. Mulberry, Jr., '39; W. R. Perret '30; G. W. Rollosen '47; and C. E. Rothgeb '30.—JULIAN E. GROSS '50, *Secretary*, 1208 Florida Street Northeast, Albuquerque, N. M.

New York

The pace of activities at the M.I.T. Club of New York is getting into high gear with the initiation of the various club programs. Activities were initiated with the annual beer party held on the evening of October 8 at the Jacob Ruppert Brewery. The knockwurst was fine and the beer excellent. About 100 enjoyed the festivities. Thanks to Harvey Kram '42 and Jim Patterson '36 for their efforts in organizing this successful party. At this writing, about 100 additional members have paid their dues. We are expecting to hear from some 500 of last year's members, and we can look forward to a balanced budget if all members will pay their dues. The 1958-59 directory will be published early in November. The listing will include over 1,800 members.

We look forward to an American Society of Civil Engineers M.I.T. graduates get-together for cocktails and dinner on October 18 at the club headquarters in the Biltmore Hotel; a barn dance sponsored by the Long Island section, Friday, October 17; and the annual Westchester dinner meeting scheduled for October 24 at the Scarsdale Golf Club and sponsored by the Westchester section.

M.I.T. men who may be in the New York area on November 17, 1958, should plan to attend the Silver Stein Dinner. John W. Gardener, President of the Carnegie Foundation, will be the speaker. All who plan to attend can look forward to a great evening.

The Alumnae Association has nominated the following Club members to the

M.I.T. Corporation Visiting Committee: Joseph W. Barker'16, Modern Languages; Edwin S. Burdell'20, Regional and City Planning; James A. Lyles'27, Economic and Social Science; Ward J. Haas'43, Biology. John C. Sluder'41 was nominated as Alumni member on the Corporation Visiting Committee for the Department of Food Technology.

Our congratulations to John F. Hennessy '24, who was just made a trustee of the New York Savings Bank. John is a past president of the New York Association of Consulting Engineers and of the New York Building Congress.

Gene Smoley'19, our Club President, and his wife are off for a vacation and business trip to Europe for the month of October.—VERNON O. BOWLES'33, *Secretary*, Holly Ridge Farm, Katonah, N. Y.

Puerto Rico

On September 20, 1958, an ordinary meeting of the M.I.T. Club of Puerto Rico was held at the Hotel San Juan. A total of 24 persons were present during this meeting. The Club had lunch at the Hotel, and during the afternoon some of the members used the beach and swimming pool facilities. Business matters relating to the Club were discussed during this meeting.—JORGE E. LOPEZ-RAMIREZ'45, *Secretary*, P. O. Box 69, Hato Rey, Puerto Rico.

Washington

Of particular interest to the members of the M.I.T. Club of Washington was the announcement that three area Alumni have been nominated for membership on the M.I.T. Corporation's Visiting Committees.

Francis V. du Pont'17, a Washington consultant, has been renominated an Alumni member of the M.I.T. Corporation Visiting Committee for the Department of Civil and Sanitary Engineering.

William C. Foster'18, a Vice-president of Olin Mathieson Chemical Corporation and chief U.S. representative to East-West Conference on Ways of Preventing Surprise Attacks, has been renominated an Alumni member on the M.I.T. Corporation Visiting Committee for Sponsored Research.

Merle M. Andrew'48, of the Air Force Office of Scientific Research, has been nominated an Alumni member on the M.I.T. Corporation Visiting Committee for the Department of Mathematics.

We are looking forward to our first meeting of the year to be held Friday, October 17, at the Cosmos Club, as these notes are written. Advance registrations indicate that this will be one of the largest meetings in recent years, a reflection, no doubt, of the great interest in Dr. C. S. Draper'26 of M.I.T., who will speak, and his subject, "Inertial Guidance."—HOWARD K. SMEAD '51, *Review Secretary*, 6732 Nevius Street, Falls Church, Va.

CLASS NOTES

1890

A letter from Hayden's daughter says he broke his hip several years ago and has been confined to a wheel chair but his general

health is good. He is keenly interested in the class notices and reports from the Alumni Association. He will celebrate his 91st birthday December 16.

Curtis is still going strong down at Brewster on the Cape. He has been selected as Doctor of the Year for the third time by the Barnstable District Medical Society. He is on the staff of the Cape Cod Hospital at Hyannis.—SPAULDING BARTLETT, *Secretary*, 516 Main Street, Webster, Mass.

1891

In sorting over some old letters I came onto a white calling card, three inches by two inches. On it is printed, in Roman type, the following: "Reception for the Right Honorable Winston Churchill. Imperial Ball Room, Hotel Statler, Boston, Mass., Thursday, 10:30 to 12:00 P.M., March 31, 1949. Dress optional. Admit one."

Of course it was my ticket—not lifted—or my admission. Some of you may recall the mob of eager Americans who centered in that particular spot on that one special night. I could discover but one location of free space, and that was the stage of the theater in that ballroom. There I took my lonely stand, but not for long; for there emerged from the milling throng the beloved form of that giant, radiant with goodwill and kindness. It was Frank Howard of our own Class of '91. He clambered up to my exalted perch. I wrangled another chair from a dressing room; and there we sat for the rest of the evening.

Quite soon this very special person and his wife and retinue appeared and took places in a balcony box not 20 feet from where Frank and I sat. What luck! We could see and hear the whole show; and Churchill was at his very best. He dismissed the great address he had just given before 16,000 people in Boston Garden as if that were a minor matter; just a wave of his hand and "Now that's over let us have some fun and talk of the things we like. Everybody knows I'm British through and through, but I'm American, too," he went on. "I am an active and loyal member of the Society of the Cincinnati." That is the patriotic order founded May 13, 1783, by officers of our Revolutionary Army who had served on Washington's staff for three years or more, and it is kept alive by the election of a male descendant of a deceased member to fill the vacancy caused by his death.

After this brilliant and friendly talk, Churchill's lady was introduced; and she graciously thanked the American people for the hospitality and friendliness they were bestowing on her husband and herself. At the adjournment Frank and I felt that if we had not been on the summit we had been near it and had spent an hour long to be remembered.

As I was writing these notes for December's Review, the doorbell rang and who should walk in but Harrison Cole, M.I.T. '91. He was just up from his cranberry ranch out on Cape Cod. As we sat before the open fire talking of Tech and the '91 men we had known, I thought it was these casual and informal meetings that have bound us '91 fellows together as a band of brothers. And I must not forget to say that Harry left me a five-quart pail of delicious cranberries, right from the vines, for our

Christmas festivities.—WILLIAM CHANNING BROWN, *Secretary*, 15 Forest Avenue, Hastings-on-Hudson 6, N. Y.

1892

It is the sad duty of the Secretary to report the passing on of another of our classmates, Herbert Fairfield, who died Friday, October 3.

As a fellow student at M.I.T. and in the years since, during his career with Fairfield and Ellis, the Secretary has had many interesting conferences with Herbert. The heartfelt sympathy of all his surviving classmates goes out to his widow and the other members of his family.

The Secretary is indebted to the *Boston Globe* for the following account of his career: "Services for Herbert G. Fairfield, 87, founder of Fairfield and Ellis, general insurance agency, were held Monday, October 6, in the Church of the Advent, Brimmer Street, Boston. Mr. Fairfield, who died late Friday, lived at 141 Revere Street, Boston. He was born at Kennebunkport, Me., and was graduated from Massachusetts Institute of Technology in 1892.

"He began his insurance career as a special agent for the Royal Exchange and organized the H. G. Fairfield Agency in 1902. He later joined the firm of Darling and Russell to become Russell and Fairfield, later known as Russell, Fairfield, and Ellis until 20 years ago when the firm became known as Fairfield and Ellis, with offices in Boston, New York, Montreal, and Toronto. Mr. Fairfield, also head of Fairfield and Ellis, Ltd., of Montreal and Toronto, one of the largest insurance offices in the Dominion, formerly owned the Dorchester Ice Co.

"At the time of his death he also headed the Old Colony Crushed Stone Co. in Quincy and the Old Colony Construction Co. He was president of the Boston Board of Fire Underwriters and the Boston Association of Casualty Insurance General Agents in the 1930's. Mr. Fairfield served as trustee of the Insurance Library, director of the National Service Co. and of the Hanover Insurance Co., and was founder of the Prouts Neck (Maine) Yacht Club and former president of the Prouts Neck Country Club. He was a summer resident at Prouts Neck for many years and was among the first members of the Algonquin Club of Boston.

"He leaves a wife, the former Katherine Kilman; a son, John, associated with Fairfield and Ellis; and three daughters, Mrs. George V. (Elinor) Steele of Dedham, Mrs. Julian M. (Katherine) Freston of New York, and Mrs. Edward W. (Barbara) Sexton of Cambridge. The Reverend Canon Harold Belshaw of Greenwich, Conn., officiated at the services. Interment was in Arundel Cemetery, Kennebunkport."—CHARLES E. FULLER, *Secretary*, P. O. Box 144, Wellesley 81, Mass.

1894

Class news about members of a class like ours, which has become so reduced in numbers as is inevitable in a class almost 65 years out of our alma mater, is sure to be limited in quantity unless the secretary can find some way to stimulate its members to report on their travels, hobbies, or old-age activities. It is a pleasure at this time to report

that three of the members of the Class who have had minor ills or mishaps are distinctly on the mend. Jack Nowell has gleefully written that the fall mentioned in an earlier report has had no untoward results, and that he is again in full activity in his gardening and other pursuits.

Our most distinguished yachtsman, George Owen, who a few weeks ago was briefly hospitalized, is again much in demand and very active in Masonic matters, where his oratorical powers are greatly appreciated. He is also still a careful student of yacht design and has privately made some most interesting comments on the yachts participating in the America's Cup racing. As an expert designer and a former participant in much yacht sailing and racing, his comments are of a professional quality and would make interesting reading to those indulging in this "sport of kings."

A letter from Howard Barton reports that he had an accident while doing some construction work on his place and injured his back quite severely. But he says: "Don't tell the boys: I should have known better." Disregarding his orders, the Secretary is glad to report that he now is on the mend; and he and his daughter, who works at the Nuclear Physics Laboratory at Yale and also keeps house for her parents, are wonderfully successful in the development of a beautiful garden, in which they take great pleasure. Howard expects to be able to work in his shop this winter and to do what he calls "some real gardening" next spring and summer. He is also much interested in photography; so with the two hobbies, or perhaps three, he expects to keep busy and, we hope, very happy. He demonstrates well, as do the others here mentioned, the necessity for some compelling interest when the active professional days are past.

Once more the Secretary would urge all other members of the Class to send him news of hobbies, travels, or other major interests. Such news is eagerly read and appreciated by your old friends of long ago.—S. C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1896

News from California is illustrated with a couple of snapshots of a San Diego residence and of its owner, who appears to be strong enough to take care of himself; Jack Eynon lives here as he has for over 30 years. He still drives his car and enjoys traveling: by air, to Rome three years ago and to Vancouver this summer, thence by rail and water to Sagaway and Carcross, Alaska. He, like his opponent, Henry Hedge, at Wiano, has given up golf; but it is the only sacrifice he makes to his mature years.

Dan Patch'02 visited California this summer and has thoughtfully sent news of a visit he made to Walter Leland, who is still functioning as president of his company, the W. S. Leland Co. Walter said business continued good despite the recession; one of his draftsmen drives him to work and on trips to field work. He gets in on engineering and determining the bids. Dan says: "He is a marvelous example of human durability and seemed pleased to have me, an old student, call on him."

Paul Litchfield has been elected honorary chairman of the board, Goodyear Company, according to the financial news in daily

papers. From Plymouth this cool, clear day the coast north of Duxbury as well as Provincetown can be seen as these notes are written; but there is a grave doubt in the writer's mind whether Paul will retire to Green Harbor or continue to be a real factor in Goodyear.

The following resolutions were adopted by the M.I.T. Alumni Council at its October meeting, having previously been drawn up by a committee including Samuel C. Prescott'94; Frederick W. Damon'96; Walter Humphreys'97; Ralph T. Jope'28; and James M. Driscoll'96, Chairman:

"Be it resolved: that we hereby pay tribute to John Arnold Rockwell of the Class of 1896, by whose death on July 23, 1958, the Institute, the Alumni Association, the Athletic Association, the Class, the medical profession, the community, and many organizations and societies lost a devoted and warm friend. Throughout his life "Dr. John," as he was affectionately known, served M.I.T. by contributing generously of his time and wise counsel to his Class, the Alumni Association, and to generations of M.I.T. men.

"Together with Thomas Hibbard'75 and Frank H. Briggs'81, he represented the Alumni Association in the organization of the Advisory Council on Athletics on January 18, 1898, and served continuously on this Council, interrupted only by war service in World War I, until the Council ceased its guidance of M.I.T. athletics on June 5, 1947. As a member of this Council, and its chairman from October 20, 1910, through June 5, 1947, he contributed in this activity alone 50 years of devoted work to M.I.T.

"At the suggestion of one of his loyal colleagues, Henry E. Worcester'97, that he might enjoy the honor during his life, the Field House was dedicated on Alumni Day, June 12, 1948, as the Rockwell Athletic Cage, in appreciation of his faithful and effective service to M.I.T. athletics. His contributions to athletics were not limited to M.I.T., for he served with distinction on many national intercollegiate athletic associations and was instrumental in initiating changes in athletic rules, especially in wrestling, which lessened the chance of injury to the participant without detracting from the fun of the sport itself.

"Professionally he served as medical director at M.I.T. from 1913 to 1918 and again from 1919 to 1920. In World War I he was a major in the Medical Corp and served as medical chief of Base Hospital Number 44 at Pougues Les Eaux, France. He participated early in X-ray research, the ill effects of which he suffered for the rest of his life. In 1901 he became a member of the staff of the Massachusetts Homeopathic Hospital—later known as the Massachusetts Memorial Hospital, and was presented a citation for 50 years' service in 1955.

"Throughout his eventful and fruitful life as a medical man, as a devotee to amateur athletics, as a true sportsman, as a loyal member and officer of the Class of 1896 and of this Alumni Council from 1919 to 1958, he was highly respected and much loved by his associates. His life has stood and stands as a model for many to follow. As members of this Alumni Council, we join in sincere tribute to his memory, in appreciation of his years of productive work in behalf of M.I.T., and in the expression of our deep sympathy

to Mrs. Rockwell and the members of his family.

"Be it further resolved: that these resolutions be spread upon the records of the Alumni Council and that a copy thereof be transmitted to his family."—JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46, Mass.

1897

The sad news continues to come in. Tom Weymouth died in his sleep at his home, 930 Park Avenue, New York, on September 22. From the standpoint of engineering achievement, he was one of the outstanding men of our Class. Nevertheless, he was keenly interested in class affairs and a loyal attendant at our reunions. Those who, last year, attended our 60th will recall he came from a considerable distance to do so. Not only did he have a genial personality, but he had unusual versatility—a man of many accomplishments. In addition to his record in his profession, he played the violin; was an artist, painting many pictures; and was also a sculptor. The *New York Herald Tribune* of September 23 contained the following obituary:

"Thomas R. Weymouth, 82, a leader in development of the United States' natural gas industry and a former vice-president of the Columbia Gas System of New York, died yesterday at his home, 930 Park Avenue, after an illness of several months. Retired since 1941, Mr. Weymouth had divided his time between New York City; Bemus Point, N. Y., on Lake Chautauqua; and Lock Haven, Pa., his birthplace.

"Before joining Columbia in 1930, Mr. Weymouth had been president of the Iroquois Gas Corp. of Buffalo, Oklahoma Natural Gas Corp., and American Natural Gas Co. of Tulsa. At one time or another, he had been director of a half dozen gas firms.

"Mr. Weymouth, a mechanical and electrical engineer, was graduated from M.I.T. in 1897. His first job was in New York City as a laborer helping to convert cable cars to trolleys. Shortly after that, he joined the United Natural Gas Co. in Oil City, Pa. He was the inventor of the 'Weymouth formula' for measuring the flow of natural gas through a pipeline, and also of a new type flatbed truck durable enough to haul 23,000-pound loads in the Pennsylvania oil fields—a big achievement in 1907.

"Throughout World War II, Mr. Weymouth was natural gas consultant of the Petroleum Administration for War. He was a former vice-president of the American Society of Mechanical Engineers. In 1941 the American Gas Association gave him its highest award for leadership in research. Surviving are a sister, Mrs. Edward G. Kendall, and a stepson, William Loomis."

On September 25 George Wadleigh wrote as follows: "His stepson called my office yesterday morning and briefly told my secretary that Tom had died in his sleep Monday night. I intended to phone him yesterday, as I do occasionally; had not done so for several weeks, and on that last occasion he sounded as cheerful as usual, though his arthritis—which has bothered him much for two or three years—prevented him from going to Bemus Point, where he usually

spent his summers. Tom lost his wife about four years ago.

"Tom's brother Clarence he lost within a year or so. I think that Clarence had several children. Tom had none, but he was very fond of his stepson Loomis, who has several children. I have met Loomis, who I believe runs an auto supply business in the Chautauqua area. Mrs. Edward G. Kendall, 12 East 86th Street, New York City, his sister, I have met and I am writing her. A business matter here kept me from going to the services at Brick Presbyterian Church, New York. Flowers were sent from the Class.

"Needless to say we have lost perhaps the outstanding man of our Class, from a strictly engineering standpoint."

Fred Hunnewell writes from Washington under date of September 28: "Dear Jack: We returned to Washington a few weeks ago, after a pleasant New England trip; and amongst the mail awaiting us was the carbon of your letter to Jere Daniell. It would have been a pleasure to see old M.I.T.'s of '97 (antiques, that is), but our route and schedule didn't seem to fit conditions. But we did spend 10 days at East Bay Lodge, the site of our 50th celebration of 1897. A pleasant place to stop. Don't you get to the Capital on trips of business or pleasure? The younger men are right now developing new interest in the M.I.T. Club with a meeting at the Cosmos Club on October 17. We would be delighted to show the IIsleys the new Club."

Our Class Agent for the Alumni Fund again deserves our praise for his accomplishments, outlined in his circular letter of October 1: in the first place, for the fact that last year '97 led all classes in percentage of members contributing; in the second, for our average contribution being "well toward the top."

We also send greetings to "the generous contributor who prefers to remain anonymous," whoever he or she may be. Be sure to write in your wishes regarding a 62d reunion next June.

Much to our regret, both George Wadleigh and I missed the Alumni Conference at M.I.T. on September 12 and 13, he on account of business and your Secretary because of a slight indisposition.—JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

Continuing the chronicle of the 60th. For the sake of the context, it might be well, gentle reader, to reread the November class notes.

Writes Henry C. Belcher from Proctor, Vt.: "Am sorry I cannot attend. My doctor says that old age is creeping up on me. Greetings to those who can make it." You have hit the nail right on the head, Henry. The great problem of '98 now is: how we can have enjoyable reunions despite this "ageing process," which we all appreciate.

Jack Bleecker from West Chester, Pa., sent two messages: "On my 80th birthday this month I was thankful that the ailments that prevent my attending '98's 60th were physical not mental and I can still think a lot about my Class and classmates." Later he wrote: "Dear Ed, Thanks a lot for your note on back of 60th reunion notice for '98, and the final notice is extremely interesting. I will be drinking your health and that of all of the

Class on the 16th and 17th and wishing I were with you. Your devoted classmate, Jack." Thanks, Jack, for the extra personal greeting. We still read with interest the all-inclusive prophecy which '98 listened to with great anticipation in Old Rogers at memorable class day exercises. How about that reunion in the Klondike, now that Alaska has become a state?

Howard L. Bodwell of 1424 Torrey Pines Road, La Jolla, Calif., writes: "Dear classmates of '98: I regret very much that I cannot be with you. I am very well but Henrietta's eye condition (glaucoma) makes it impossible for her to come and I must stay with her. Otherwise her health is fine. Our best wishes to you all."

Writes George H. Booth from 243 Roswell Avenue, Long Beach 3, Calif.: "It would be wonderful to be with you for the 60th reunion, but I cannot. However I hope the other 87 will enjoy it." Will Brewster from 842 North Peninsula Drive, Daytona Beach, Fla., writes: "Sorry—Greetings to all—but my health won't permit travel."

From Leroy H. Byam, Yonkers 5, N. Y., we received: "Best regards to those who are more energetic than I am. Would like to come but it is too hard a trip for me." Still the '98 question, how to overcome distance and other circumstances preventing re-union.

Howard B. Collins from Nucla, Colo., writes: "With best wishes and congratulations to those of you who are fortunate to be present at our 60th. I will certainly be enviously thinking of you on June 16 and 17." Howard, as a representative of the celebrated '98 "Miners Union," perhaps you can technically advise us how to solve the '98 question.

From Maurice Delano of Haverford, Pa., we received the following: "Hearty congratulations to each of you that you are able to be present. I had hoped to be with you, but a light stroke which came to me on February 17 has prevented. Am partially recovered and able to write once more. This makes the fourth five-year reunion I will have missed with you. The 5th, 45th, 55th, and 60th."

A fine record, Del! How many classmates can equal or surpass it? Perhaps our president statistician can inform us.

From a young member of the Class, Everett C. Emery of 68 Bridge Street, Lexington 73, Mass., came the following exhortation: "Pull out all the stops, boys, and go to it while you are still young." Wait until you read George Cottle's description of the reunion at the Algonquin Club, and then judge. Hope you can be with us, Emery, at the next reunion!

Now listen to this from Edward T. Foulkes of 421 15th Street, Oakland, Calif.: "As a Stanford University transfer in my junior year I came to know intimately only those in Course IV. Coming west after a two year round-the-world trip on a Rotch Traveling Scholarship, I located in San Francisco just in time to welcome the 1906 earthquake and fire. To the Class of '98 with its outstanding record, and especially to those in Course IV, I extend my sincere congratulations. May we all be thankful for the years spent at M.I.T.; and to keep our minds happily engaged in our vocations or avocations for our remaining years is my wish to all." Thanks, Ed, for a suggestion of how to solve the '98 question.

Arthur I. Franklin from 2011 Talbot Avenue, Indianapolis 2, Ind., sent us a poem for

the 1957 get-together. This year we have an anagram: "When we were kids we 'went like 60';/Such speed was something to talk about!/After 60 years we go like 80;/Speed? No! Of that we can rarely shout!"

A meteorologist in the Class, Abram French, address of Box 462C, R.D. #2, Bath, Pa., advised: "I expect to leave about that time to visit the West Coast. I used to boast of the snowstorms of 1918 in Massachusetts but the snowstorms here in Pennsylvania in 1958 have been the worst of my memory. Best regards to the rest of the youngsters of 1898."

Clarence Goldsmith, "80,000 mile Goldsmith as he was called by the Army in World War II," from South Main Street, Andover, Mass., wrote: "Sorry not to be able to attend 60th anniversary of our graduation but physical condition does not warrant the trip."

Arthur W. Huse, Box 193, Elyria, Ohio, wrote: "I hope all of you have good health and many years to come. Dear E.S.C., I remember you very distinctly after 60 years and have the pleasantest recollections." Thanks, Arthur, for the wholesome and longevity greeting to the Class; and the kind greeting to the Secretary.

Arthur S. Keene, 15 West 10th Street, Kansas City, Mo., wrote: "My best wishes to all the fellows who attend. I am practically retired. I have built an organization which will carry on. I go to the office when the spirit moves. Am at present building, among other commissions, a five million dollar office building for American Telephone and Telegraph." Congratulations, Arthur, that with your own organization you are still able to work as it seems wise to you.

Edwin Kuttroff, 128 West 59th Street, New York 19, N. Y., wrote: "Cannot tell as yet! (1) May be away! (2) May not be up to same!" Better luck another time, Edwin. We really did have an unusual and very happy reunion.

Mabel Forrest Lambert, 70 Wannalancit Street, Lowell, Mass., wrote: "Hope the day will be lovely and a happy occasion for all. Please thank Mr. Cottle for his generous invitation. Sincere good wishes."

Willis L. Learned, 578 Norfolk Street, Holliston, Mass., sent the following: "Sorry, but will miss seeing the boys very much."

Edmund C. Little from Melrose Lodge, Tryon, N. C., sent a card and two letters. The card of greeting follows: "Greetings to my dear classmates. Do wish it were possible to be with you but the trip from Tryon, N. C., to Boston is too roundabout. This is a delightful spot in the Carolinas—wish you were here to enjoy spring in all its glory. In pretty good shape for 84. Very best to all."

From his letters we quote in part. Monday, May 5, 1958: "Dear Chapin: Hoped it would be possible to join my classmates but it seems best to 'stay put' in the Carolinas. It was a joy to be present on our 50th and 55th. Maintain my residence in St. Louis—have spent many months in Tryon, N. C., a lovely spot in the Blue Ridge Mountains. George Cottle has been, and is, our class 'angel'—a lovable and generous gentleman. My very best wishes to you and my classmates. Cordially yours, Edmund C. Little. Born in Lowell, Mass." June 2, 1958: "Dear Chapin: A decision to, or not to, join my classmates at our 60th was difficult. Seem to be in good health but from 'here to there'

would not be an easy trip. So glad to learn you have been to Tryon and have visited Pearson Falls and 'fairyland' glen.... Believe N. C. with its lovely scenery and rich deposits of valuable minerals to be one of our choicest states. Know you will have a real 'heartwarming' time. My very best to you and dear classmates."

In this last letter, there was enclosed an excellent snapshot in color of a white dogwood tree marked on the rear: "A lovely dogwood tree, April 15, 1958, Tryon, N. C." Thanks, Ed, for the thoughtful card and letters and the lovely snapshot.

Willard B. Nelson from Alderbrook, Hulets Landing, New York wrote: "Up to this past week I had hoped that I could time my annual visit to Boston to coincide with Alumni Day and our 60th, but it has turned out not to be so. This is not due to any physical disability of mine but to the convenience of others. Give my greetings to all who gather."

Herbert B. Newton, 214 Oak Street, Holyoke, Mass., who passed away on June 10, sent the following card: "Greetings and best wishes to all. Wish I might be with you."

From Ralph R. Rumery, Short Hills, N. J., came the following card: "Regards to all." Also, a cordial letter, later, from which we quote in part: "While I have not attended any of the reunions I have never lost interest in the famous Class of '98. Hope you have a pleasant meeting on June 17 and remember me to any who do remember me. With kind regards."

Albion W. Shaw, 40 Broad Street, Boston 7, Mass., wrote: "I have been through very severe check-ups at the New England Center hospital and, although I seem to be in good condition for my age, I do not feel able to attend the reunion. I still go in to business but make short days and take it easy. Best regards to all my old friends and classmates."

Edward C. Sherman, 1002 Pennsylvania Avenue, Tyrone, Pa., wrote: "A mild stroke a year ago ended extended travel for me."

A card with three Grecian stamps and a Grecian air-mail sticker arrived just before the reunion. It came (you have guessed it already) from our classmate Gorham P. Stevens, American School of Classical Studies, Athens, Greece. He wrote a greeting in Grecian letters, and then kindly translated for us: "Cordial greetings to all members of the Class." Thanks for your thoughtfulness, Gorham. Your card, also, holds the long distance record—some 6,000 miles!

Winthrop B. Wood, Mount Vernon, N. H., wrote: "Sorry but it is physically impossible for me to attend. My regards to fellows of Class 1898; but don't suppose many remember me, as all of my intimates in Class have passed on."

We received a nice letter from Anne D. (Mrs. Karl W.) Waterson, Box 185, Chelsea, Vt., from which we quote in part: "I regret very much that Karl will not be able to attend the class reunion on June 17. He suffered a stroke in 1954 and since that time his memory has failed gradually.... We are located here in Chelsea permanently. It seemed the best thing to do as Karl can have more freedom here.... Both our children were married last summer. Anne is living in New York. K. W. Jr. graduates from Washington and Lee in June and will enter Columbia Medical College in September. He had two years at M.I.T. but decided engineering was not for him. He is very happy

with what he is doing now and I'm glad he found himself. I am truly sorry to miss the reunion this year, as I have thoroughly enjoyed the ones I have attended in the past. Please give my kindest regards to Mr. Cottle and Mr. Edgerly." We remember with pleasure when Karl, Jr., accompanied his father and mother on the occasion of the 55th, and wish him all success in his chosen profession.

Since the reunion we have received a letter from our distinguished classmate Roger W. Babson, with a postscript which is germane to the subject of continued business activity at 80 years or more. We quote the postscript, *in toto*: "You will be interested to know that I am sailing from New York September 30, on the S. S. *Enterprise* of the Farrell Lines, for South Africa. My purpose in making this trip is to make a study of the banking situation there, in the interest of my clients. There are some very strong banks in South Africa. With the uncertainty of the 'Black Problem' facing the country, these stocks are selling at very attractive prices, although the banks should be very strong and profitable. You know I am a great believer in bank stocks in properly diversified territory."

Talking with Roger over the phone prior to his sailing, we took occasion to caution him not to work too hard. The task he outlined seemed to us formidable; but Roger seemed all set to take it in his stride.—EDWARD S. CHAPIN, *Secretary*, Hotel Vendome, 160 Commonwealth Avenue, Boston 16, Mass.

1899

Ed Sutermeister carved his name deep in the annals of the paper and pulp industry, judging from the number of communications and clippings that have come to my desk since his death on June 30. Ed went to the hospital on May 18, and the diagnosis was made that he had inoperable cancer of the liver. His daughter says of him: "He was a remarkable man and a very wonderful person. His courage in facing what he knew was his last illness and his uncomplaining endurance of the extreme misery that followed were nothing short of awe-inspiring.... Quietly satisfied as he was with the sound value of his publications.... his deepest satisfaction lay in the warm appreciation by others in the industry of his kindly guidance and friendly counsel. Many letters have been received from people saying what a strong influence he had on their lives."

In my September Alumni Fund letter I stated that as of July 1 there were 69 classmates still living (four have died since that date). This figure was taken from Chick Kane's Alumni Fund letter to Alumni Fund secretaries. Assistant Secretary Percy Withereil called my attention to the fact he had a count of 99 members received from the Alumni Secretary's office. Inquiry revealed that there are 30 more members than on Kane's list who did not graduate or have not responded to letters or otherwise shown interest in Tech affairs.—BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass. PERCY W. WITHERELL, *Assistant Secretary*, 84 Prince Street, Jamaica Plain, Mass.

1900

Stanley Fitch sends us the following: "This is a brief account of a very enjoyable six weeks' trip to Europe last spring in company

with my daughter Katherine Forbes and Alec and Mrs. Newhall. We (except Alec who preceded us by a few days) left Logan Airport on April 23 via Pan American World Airways and, with brief stops at Shannon and London Airports, arrived in Brussels next day. Here Alec joined us. We saw the Brussels exposition during a week of cold, rainy weather. Our comments on the Fair as a whole and on the U. S. building and exhibits coincide with most of those reported by others. We had one good day and enjoyed a drive to Ghent and Bruges. On April 29 the day broke clear and warm, and the weather continued good for the remainder of our travels. That day we flew via Sabena to Geneva, where we stayed four days. We had two delightful all-day automobile drives to Lausanne and to Chamonix.

"Leaving Geneva by Trans World Airlines we flew over the Alps to Milan, where we were met by a driver-guide with an automobile. After a visit to the Cathedral we drove to Cernobbio on Lake Como, to Stresa on Lake Maggiore, to Portofino on the Italian Riviera (one night at each place), and the last lap of this outstanding drive via Pisa (the Leaning Tower) to Florence (May 6). Florence on the Arno, cradle of the Renaissance, is well known to most travelers; and we made the most of our four days there. On May 11 we left Florence via CIAT motor coach for Rome through beautiful country with stops at Assisi and Perugia—nevertheless a tiresome trip. At Rome, 7:30 P.M., we ran into a traffic jam due to a field day for the Carabinieri and reached the hotel two hours later. One day we drove to the Pope's summer home, Castel Gandolfo, now much in the news, and returned over the Appian Way where we saw stretches of the original stone pavement laid by the Romans 2,000 years ago. They were some road builders!

"We traveled to Naples by rail on May 17. There the outstanding day was a drive to Pompeii and Amalfi. Vesuvius, across the Bay of Naples, was a familiar sight. We made the return trip to Rome by rail on May 20 and then transferred from the railroad station to the airport, where we took a T.W.A. plane for Madrid, arriving that evening. We found Old Madrid highly interesting, the newer parts magnificent. A drive to Toledo, the home of the famous Toledo blades, was the high light of our stay in Spain. From Madrid we flew to Lisbon (May 26) and then by automobile to Estoril, about 30 miles from Lisbon on the coast. This was a famous watering place for European royalty in the good old days. It was a lovely and magnificent place at which to spend the last few days of our time in Europe, and we were sorry to leave. We went to the Lisbon airport on May 30. There we boarded a Pan American plane and, with one stop at the Azores, arrived in Boston on May 31, according to schedule."

Percy Ziegler also made a most interesting journey last spring. He, his wife, their daughter Mary, and her husband sailed to Le Havre, where they rented a small car. From there they toured Normandy and Brittany and the Coast country. Their prime objective was to observe the life and customs of the people in their own environment. They were particularly impressed with the advances that the French farmers have made in agriculture. Due in large measure to the extensive introduction of American tillage

tools, the farms of western France were found admirable. They are much larger than was anticipated. They are beautifully laid out and are kept trim and neat and weedless. The travelers were also much interested in visiting the many remains of German fortifications along the coast. After touring these provinces, the party paid a brief visit to Paris and then proceeded to Calais and crossed the Channel to England and London. Here they again rented a car with which to tour England. They first visited southwestern England, particularly Devon, stopping at Clovelly. Then they went north to Liverpool to meet two grandsons who were arriving by boat having been unable, because of school, to go over earlier. Their travels then took them to the Lake District, returning them to London by way of Cambridge. Percy and his wife then returned home to spend the summer at their summer place on Mount Desert Island in Maine. The daughter and her family continued their travels in Switzerland, Germany, Denmark and Sweden.—ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

1901

I have the following facts from Mrs. Arthur Little about her husband Arthur Little, V, of Port Jervis, N. Y.: "Ever since the summer of 1954, Arthur had been having an incurable fractured hip and occasional strokes. In June, 1958, he became bedridden; and I have had his entire care until September 18, when he suffered paralysis of the throat. After a week in the hospital he passed away on September 25." So goes another classmate.

The following is abstracted from a Gloucester, Mass., newspaper. The Frank E. Davis Fish Co., which is the only large mail order business in the fish industry, has had for its president and general manager for the last 23 years Arthur C. Davis, V, 1901. This business is now in the process of being sold.

W. W. De Berard, XI, Chicago, writes (in May): "Recent issues in *Engineering News Record* contained quite a long article descriptive of my activities in the water works field, in which I have continued for most of my professional career. My hobbies are photography and singing with the Chicago Chapter # 1 of a barbershop organization with a very long name. In photography a recent innovation has been in photographing the movement of sand and gravel during filter washing at the line of demarkation between sand and supporting gravel underdrains. In June, I shall visit my family in California, a daughter and four children at Woodland and a brother who operates our vineyards at Ontario. Of greatest interest is the youngest grandson, pitcher in a Little League baseball team."

From Anthony Peters, Westwood, Mass.: "Nothing new. Retired in 1943. Hope to be able to attend the '59 get-together, as Dedham is next door to Westwood." Charlie Tufts, X, New York, says: "Glad to see your implication that some of us still have a business address. They are better men than I am."

Do not forget to make your plans to attend our reunion at Dedham next June. Bob Derby will let you know more about it later. Also read carefully Ed Davis' notice about your contribution to the Alumni Fund.—THEODORE H. TAFT, *Secretary*, Box

124, Jaffrey, N. H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

The following letter was received from Mrs. James W. Halley of Chesterton, Ind., daughter of our late John M. Fitzgerald: "In checking over files covering my father's affairs, I have just come across your inquiry of last winter regarding his business. I regret very much that I allowed it to go unanswered. You inquired what line of business the Aldobilt Company (of which my father was founder and owner) was engaged in. This corporation was founded in 1923 and was engaged in the manufacture and sale of railway supplies and metal specialties. In recent years such track equipment as cattle guards and tie tongs, as well as types of track dollies, had been the main products. The firm had a factory in Hammond, Ind., and an office in Chicago. This summer the factory and equipment were sold and the corporation dissolved. I had continued to run the business through the fall and winter.

"You may be interested to know that my elder son has just entered M.I.T. as a second year student, transferring there after two years at Principia College. I think it would have pleased my father very much to know that he decided to go there."

Thanks to information received from his son, we have more data regarding Howard C. Turner, who died in New York on September 5, 1958: "Following his graduation he settled in Boston, where he was associated with the George F. Blake Company, manufacturers of industrial machinery. During the next three decades his major activities included association, as general manager, with both the Lamson Company, manufacturers of pneumatic conveyor systems, and Parker Brothers, Inc., Salem, Mass., manufacturers of games. Between 1933 and 1941, he was active as an independent management consultant. During World War II he was a member of the deputy administrator's staff, Petroleum Administration for War in Washington, D. C. At the end of the war, his government activities took him to New York City, where he spent the remaining years of his life. Following his government activities he again engaged in management consulting until his retirement in 1953.

"He was a member of the Massachusetts Society of Mayflower Descendants and of the Country and Union Clubs of Boston. In 1907 he married Miss Helen Jackson of Philadelphia, who survives him along with his sons, Jackson Turner of Wayland, Mass., and Howard R. Turner of New York City; and his daughter, Mrs. W. A. Dupee of Beverly Farms, Mass."

A clipping from the *New York Times* states that Aaron Schwartz died August 7, 1958. It states that he had been associated with Canadian Celanese for many years and had served as a consultant to Celanese Corporation of America. He had been lost to the Class and Institute.

Philip R. Whitney writes to Dan Patch: "My wife died in January, 1956, after a long and serious mental break. I am richly blessed with a fine son and daughter and four grandchildren. Last October I moved to a small house which I designed and built at nearly four score. That may seem crazy, but after 16 years of apartment life I am very happy

to have a real home again. You may have read in the papers recently of my son's ventures in acquiring the famed brigantine *Yankee*. He is a born sea man." Whitney's present address is P. O. Box #314, Moylan, Pa.—BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

The Class has suffered another loss in the death of Professor Emeritus George W. Swett in Brookfield, N. H., on September 30, 1958, aged 77 years. Born in Troy, N. Y., he prepared for the Institute at Cambridge Manual Training School. He graduated in Mechanical Engineering and was senior class president. Joining the Institute staff as an assistant in Mechanical Engineering, he remained an active member of the faculty until his retirement in 1951. Professor of machine design from 1929 until 1951, he was secretary of the Faculty for many years. He was also on the staff of Lowell Institute and was the first head of the Mechanical Engineering Department of Northeastern University.

Author of several treatises on mechanical engineering and a member of Societies for Testing Materials, Promotion of Engineering Education, and Advancement of Science, he is survived by his wife and two daughters, Mrs. Howard Sinclair Turner and Mrs. Wallace R. Creelman.

George H. Garcelon writes: "Mrs. Garcelon and I spent about four months on a trip to South America, leaving New York early last February. The main object was a visit to our youngest son in Santiago, Chile, where he has been for the last eight years with Anaconda Company and its various subsidiaries. We traveled both ways by boat, which made a leisurely trip with stops at the Panama Canal Zone and ports in Colombia, Peru, and Chile. As we had friends in various places, we had an unusual opportunity to see the countries and visit with the people." George is also to be congratulated on the fact that his oldest son, George F., is a graduate of M.I.T. in Chemistry, Class of '33, and is research chemist for Althouse Chemical Division of Crompton and Knowles in Reading, Pa. His other son is executive vice-president of El-Tronics in Philadelphia.

Your Secretary received a most gracious acknowledgement from Mrs. Fred A. Eustis for the scroll memorial to our former treasurer, tendered to her at our 55th reunion. We remember with pleasure her genial hospitality at many previous Class reunions.

Our Class agent, Thomas E. Sears, passed away in Braintree, Mass., on October 18. More information about him will be included in the January issue.—AUGUSTUS H. EUSTIS, *Treasurer*, 131 State Street, Boston, Mass. LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

Our request for news about your summer vacation trips did not produce a solitary card. Your reward is, therefore, no news. All we have to report is an item dated May 27 announcing another honor to Bob Sosman. This time it is the Trinks Industrial Heating Award for the outstanding work Bob has done in silica, steelmaking refractories, and pyrometry. He has been called the world's greatest authority on

silica and its alterations when heated. He is author of a book, *Properties of Silica*, and 84 technical papers dealing with various subjects mainly in the field of refractories. It is nothing new for Bob to make the headlines, but we are glad to record that he has done it again.

This is a good time to remind you again that our 55th reunion is coming in June and we are still looking for suggestions as to what we should do to celebrate. Any bright ideas or even any kind of idea would be appreciated.

In any case we suggest that you each set up a piggy bank and accumulate sufficient funds to get you to Boston and back in June. It may be impossible to duplicate the outstanding success of our 50th, but we ought not to let the occasion go by without some kind of a get-together and a renewal of old friendships.—EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge 39, Mass.

1905

First about a live wire, because the rest of the notes are on a rather depressing side. You have just received a letter from Bob McLean, Class Agent, commenting on our record in the Alumni Fund for 1958 and urging an even greater support both as to the number contributing and the amount contributed. Bob's efforts are responsible to a great extent for keeping the '05 record high.

In my 23 years as your secretary I have never had so many deaths to report. First came the sad news that Tom Estabrook, V, of Topsham, Maine passed away on September 16, 1958. We had not heard much from Tom since his retirement as general purchasing agent for the Brown Co. of Berlin, N. H., 16 years ago. But he was by no means inactive. While in Berlin he organized the Berlin, N. H., Winter Carnival and brought it to its peak in three years. He also assisted in organizing the Nansen Ski Club, the first of its type in this country. Also at Berlin he served as president of the Berlin Rotary Club; later in Portland, as vice-president of Portland Rotary; and as an honorary member of the Brunswick Maine club. He was a member of the Boy Scout Council of America, the Settler's Club and Round Table Club of Portland, the Topsham Whitten Memorial Library, and the St. Paul's Episcopal Church of Brunswick.

From Gilbert H. Gleason '03, now wintering in Florida, came a newspaper clipping with an interesting side. Everyone knows that Tom wrote "On Rogers Steps"; and do you remember the night at the Pops many years ago, Tom was called to the platform and asked to lead the Boston Symphony Orchestra in "On Rogers Steps"? I quote from Gleason's letter: "While this clipping says a lot, it omits what I think is the most interesting about Tom for his classmates. You of course know that he wrote that very fine song in our Tech song book, "On Rogers Steps." But did you know how he happened to write it? This is what he told me. He once had a close chum named Frank Falvey, who I think also attended Tech in your Class. Frank passed away early in the game, and of course Tom attended the funeral. Being so close to Frank the services

moved him very deeply, and when he got home he sat down and wrote that song. It is a good college song, which I used to enjoy much; and I think if you will review it you may see something of how Tom felt when he wrote it." I am personally very sorry that the Boston gang could not have known (and seen) more of Tom during his retirement days.

Edward F. Moody, V, died at Portland, Maine. I am trying to get a clipping telling more of his life story, but we do know that he left before graduation and was a chemist with the International Paper Co.; thence he went to the Berlin Mills and the Burgess Sulphite Fibre Co.

Another shock came with the notice that Jim Barlow, I, died suddenly at his home in Portland, Maine, on October 3, 1958, of heart disease. He had, however, been active up to the time of his death. I have a nearly full-page obituary from the *Portland Press Herald*, too long to copy. It is difficult to condense this without omitting high lights, and Jim's life was full of high lights. After graduation he taught one year at M.I.T., then three at Brooklyn Polytechnic Institute. He was with the Metropolitan Water Supply Board of New York on the construction of the Catskill Aqueduct, during which time he designed the largest water meter ever built at that time. Later he was an engineer on the Charles River Dam construction in Boston. Then began his career in municipal engineering and management, first in Cincinnati, then Dayton. He served as city manager of Dayton from 1918 to 1921. Politics ended a very efficient term there, but he returned east to become the first city engineer of New London, Conn.

In 1928 he was appointed city manager of Portland, Maine, where for 18 years "he experienced a constant struggle to hold down city expenses, in the face of popular demands for increased municipal services." I was traveling on business quite a bit during this period and heard a lot about his struggles (and his policies). I like this excerpt from a newspaper clipping: "But he never hesitated to step into controversies in defense of his policies. He gained nationwide publicity in 1934 with a firm policy of "no work—no relief." In 1933 and 1935, as relief costs soared in the wake of depression, he carried the fight for federal funds to Washington. Later he was to place his experience in city affairs at the disposal of the federal government. When, in 1941, Washington was looking for experts to investigate communities seeking allocations of federal funds under the national defense program, Mr. Barlow was one of 15 city managers who were called in to help." Jim is survived by his widow, whom many of us came to know very well at our reunions; a daughter in Washington, D.C.; and a son in Connecticut.

Just as these notes are written I learn that Al Dickerman, XIII, died at his home in Providence, R.I., on September 17, 1958. Perhaps by the time of the next writing I will have obtained further news. Perhaps before then some of you fellows will give a bit (or a lot) of news on the brighter side. Or Andy Fisher will contribute some of his rare (I do not mean infrequent) material for our humorous section. Alfred H. Kelling, V, reports a change of address, from Bethesda, Md., to 232 First Street, North, St. Petersburg, Fla.—FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass.

GILBERT S. TOWER, *Assistant Secretary*, 35 North Main Street, Cohasset, Mass.

1906

Haven't much material for notes this month. Bill Cady wrote me in September saying he had recently visited the Swift Hydro Project on the Lewis River about 45 miles Northeast of Portland, with 50 or more of the investment dealers of Portland as guests of the Pacific Light and Power Co. He enclosed their copiously illustrated folder describing the project, which will be the third on that tributary of the Columbia with two more contemplated. Their development program listed quite a variety of projects besides hydro, and I would suspect that their vice-president and chief engineer—E. Robert deLuccia, I, '27—is a busy man.

In the March notes you learned of Herbert Dean's loss of his wife and daughter, and on August 17 Herbert passed on. His son Robert wrote me early in October to report his father's death after surgery and several weeks of being hospitalized with hepatitis. Herbert Welton Dean was born in Cambridge, Mass., on November 12, 1883; prepared at Cambridge Manual Training School and entered Tech with us; was a member of the Electrical Engineering Society and graduated in Course VI, his thesis being "Tests of an Automatic Air-Brake Equipment." For the 10-year class book Herbert wrote: "Since 1906 in employ of the Bell Telephone Co. of Pa." In 1956 he could have used the same sentence, as except for a short spell in Harrisburg as traffic supervisor, he served in various capacities in the headquarters in Philadelphia—equipment, traffic, employment, personnel—becoming an assistant vice-president in 1930, retiring in 1955. Herbert Dean was another loyal classmate answering every call for class dues through the years and reporting every change of address. Unlike some Tech men, he gave his alma mater due credit for his successful professional career; and I shall always treasure the letter he sent me last December, which ended thus: "I look forward to the receipt of each issue of *The Review*." A copy of these notes was sent to son Robert, with a letter of thanks and condolence.

One of our good correspondents is A. B. (or Abe) Sherman, VI, as distinguished from A. L. (or Art), I, who stays on in the nation's capital, where he can keep tabs on Congress, I suppose. Had a long letter from Abe early in October expressing his appreciation for the personal "touch" (imagine!) I had put on the Fund letter I signed and adding that his contribution was already in the mail. Incidentally I hope the "touch" is getting substantial results with many others, too. Abe and Sadie have two pleasures that often interlock nicely: auto rides and auctions. "We are so filled up now with lovely old New England antiques that we seldom bid anything in, though we do get a kick out of watching people and the auctioneer, to say nothing of looking over the stuff for sale. . . . It gives us a day or so every week or two to put up a lunch and take a ride and see something new." Abe admits he has lived much of his life in an automobile, and even now runs up 18 to 20 thousand miles a year. Part of that they do in Florida during January, February, and March, when their address this winter will be 5144 Gulf of Mexico Drive, Longboat Key, Sarasota.

Why don't some of you sun bathers look him up and see Sadie's shell collection, too. Enclosed with his letter was the striking and inviting notice of the annual meeting and elections of the M.I.T. Club of Rochester at a nearby recreation park, with a steak dinner for two bucks and free beer and baseball. That club is a live one with a variety of interesting meetings during the year, and such an outdoor fall gathering probably gets them off to a good start.

Best wishes for your health and happiness at Christmas and throughout the new year from President Kidder and Alma, Vice-president Chase and Bertha, Secretary Rowe and Marion—EDWARD B. ROWE, *Secretary*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

Your Secretary and Class Agent for the M.I.T. Alumni Fund attended the second Alumni Fund Conference on the campus at M.I.T. on last September 12 and 13, and had a most delightful, informative, and stimulating time from 9:20 A.M. on September 12, when he arrived, until 2:30 P.M. on September 13, when he left. The contributions of '07 men during 1957-58 to both The Alumni Fund and various Tech funds were disappointingly low, but our total class gifts to the Institute 1940-1958, inclusive, including the Alumni Fund, amounted to \$278,563; and the donations to the Alumni Fund by itself during that same period were \$82,139.

In the November Review we told of the physical strength and prowess of Milton MacGregor in mountain climbing. We now record the physical strength and skill of Arthur Christensen in water skiing. It seems that on August 30 there was a water skiing competition at the Savannah, Ga., Marina; and midway through the exhibition, our 75-year-old classmate arrived on a slalom, having skied all the way from Beaufort, S. C., where he lives. He had consumed four hours in making the 45-mile trip. Piloting the boat that pulled him; powered by a 45-horsepower motor, was his son-in-law. Arthur said that he had to stop three times because of obstacles in the water and that he fell off four or five times, but that he did ski all the way. Moreover, he did it the hard way—on one ski. This is the first time that the trip from Beaufort to Savannah has been made on skis, and by the oldest known water skier—our classmate.

In the *Denver* (Colorado) *Post* of August 3, 1958, appeared a picture of John Evans, at his desk in the First National Bank of Denver, of which he is president. I quote from this newspaper story about our classmate: "Throughout the banking world the name John Evans is synonymous with sound understanding of banking service in its highest form. In the 30-year tenure of John Evans' presidency, the First National Bank of Denver has expanded steadily to maintain its position as the oldest and largest financial organization in the entire Rocky Mountain area and to join the ranks of the 100 largest banks in the nation. In addition to Evans' service to the First National Bank of Denver, he served as chairman of the board of The International Trust Co. to the date of its consolidation with the First National Bank of Denver on August 10, 1958. He is also president of the A. V. Hunter Trust, Inc., and chairman of the board of the Denver

and Rio Grande Western Railroad; and a director of the Holly Sugar Co., the Colorado Milling and Elevator Co., the Colorado Interstate Gas Co., the Denver Tramway Corp., the Golden Cycle Corp., the Cheesman Realty Cos., and the Evans Investment Co.

"Evans' activities of a civic nature include his service as a trustee of the Denver Museum of Natural History and as a director of the State Historical Society of Colorado and the Air Force Academy Foundation. Clubs in which he holds memberships include the Denver Club; the University Club, New York City; the University Club of Denver; the Denver Country Club; and the Denver Athletic Club. His education included the Denver Public Schools; the preparatory school of the University of Denver; and a bachelor of science degree in Electrical Engineering from the Massachusetts Institute of Technology. In 1945 he was awarded an honorary LL.D. from Northwestern University, Evanston, Ill.; and in 1948 an honorary LL.D. from Colorado College in Colorado Springs, Colo. The year 1911 marked John Evans' entry to the banking profession when he became a director of the International Trust Co., of which he became president in 1916. Historical significance of the name Evans to Colorado is a matter of record. Grandfather of the First National Bank of Denver's president was Governor John Evans, who was appointed second territorial governor of Colorado by Abraham Lincoln and was the leading spirit in the building of Colorado's early railroads. In addition, Governor Evans was the founder of two great universities, the University of Denver and Northwestern University in Evanston, Ill."

Remember our 52-year reunion that will be held at Oyster Harbors Club in Massachusetts, our usual reunion gathering place, on next June 12, 13, and 14, and mark these dates on your calendar as definite engagement dates with '07 classmates.—BRYANT NICHOLS, *President and Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary and Treasurer*, 18 Summit Street, Whitinsville, Mass.

1908

Our second dinner meeting of the 1958-59 season will be held at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, Mass., on Wednesday, January 7, 1959, at 6:00 P.M. Ladies are invited.

George Belcher, our Class Agent, attended the second Alumni Fund Conference at M.I.T. on September 12 and 13. During the banquet Friday night at Walker, Harold Osborne, chairman of special gifts for our 50th year gift to the Institute, was presented a citation and gift for the notable work he did. Harold was not present, so George was his proxy. I hope you have all carefully read George's letter of October 1 and decided to make a contribution to this year's Alumni Fund. Let's see if we can't better the figure of 57 per cent of the Class giving. Everyone should give something, no matter how small; it's money well spent.

Mrs. Miriam Martin Whitcomb and Mr. Charles Frederick Joy—Ted to you—were married on September 20, 1958, in the Church of the Transfiguration, Bretton Woods, N.H. They will be at home after

January 1, 1959, at 50 Meredith Circle, Milton, Mass.

News is scarce. Why won't some of you take pity on your Secretary and drop us a line, telling about what you did during the past summer? It's hard making bricks without straw.—H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

During the summer inevitably a large number of items for class notes is received by the class secretaries; and in the interest of the space limitations of the November Review, those of us who have an undue amount hold over what items we can for the later numbers.

Art Morrill, XI, although he spends most of his time in foreign lands, is most faithful in sending us news for the class notes. This past summer he sent us a letter from Venezuela, where he has been located the past several years engaged in his specialty, the promotion of public health. Enclosed in the letter was the post card ballot in which he gave Molly, Tom, and the Secretary his unanimous vote, of which we are all so appreciative. His letter, which is quoted below, is most interesting at this time since it depicts at close range the situation in that country, which so recently has been torn by revolution: "Is it too late to vote for class officers? I was surprised just now to find that I had been storing this ballot card so long. After seven years in Venezuela the spirit of mañana must really be catching up with me. We have recently had a revolution and a near *coup d'état*, but it hasn't made much difference to me except that I can argue a little more freely with my friends about politics. I used to think that the newspapers in Venezuela were uninteresting because the two principal subjects of discussion in the Boston papers were never mentioned at all in Caracas. First, they never mention the weather because there is nothing to say: it never changes. Usually it is bright and sunny, rather warm at midday, with a short, hard rain once in a while. You can't make much of a newspaper story about that. Rarely it is very dry, or there is a 'cold wave' some December night when it gets down around 55 degrees F., but those times are scarce. Secondly, under the dictatorship they never mentioned politics, either for or against. I noticed the same thing in China under the Nationalists. Nobody ever said anything bad about Mme. Chiang Kai-shek, nor anything good either. They just said nothing. In this last respect things are now all fixed in Venezuela. The newspapers are full of the doings of the political parties and statements by their leaders. They are planning soon to have proper elections to choose a 'constitutional' president."

A lucrative source of class news is the replies which Art, I, receives to the letters that he sends soliciting contributions to the 50 year fund, for which he is working so arduously. Dwight Sleeper, VI, writes from the Cape: "My wife and I celebrate our 50th wedding anniversary on July 28, 1959, and hope to have our four living children, their wives and husbands, our thirteen grandchildren, and two great-grandchildren with us." The Class surely congratulates Dwight

and his wife on the great occasion to come this next summer. Incidentally, Dwight lives at Harwichport where we are holding our 50th reunion, so we shall most certainly see the couple about six weeks before the great event.

Earl Smith of Jackson, Calif., who spent only a part of the freshman year with us but nevertheless has shown much interest in our 50th year, writes as follows: "I get dozens of letters every year asking for my participation in many wonderful worthy causes. Yours is the first personal letter that I have received along that line for years. Let me be frank with you—I have a mental image of just two figures in my Class. One is Maury Scharff; he sat beside me in general chemistry under Professor Hall. The other is Herbert Stiebel of St. Louis. I saw Herb last in Butte in 1916. The records will show that I entered M.I.T. in the fall of 1905 with the Class of 1909. I dropped out after one term. Further research would show that after 1922 I returned to M.I.T. as a graduate student taking special work under Professor Richards. I had graduated from the School of Mines of the University of Missouri in 1909. A few years ago I attended an Alumni dinner in San Francisco but found no one of my Class there. Now I am nearly 70 and have been retired for several years. (You must be in about that same age bracket yourself.) I keep busy with my garden and the home and am a member of the County Central Republican Committee. The salary is nothing and the honor is less than that, but it gives me a contact with people. We have made our home in this Mother Lode village for nearly 25 years, and we would not consider living anywhere else. This is where we have our circle of friends. From a statistical point of view our income is not large, but it is amply sufficient. Best wishes to you and to the members of the Class of 1909."

Following is an extract from a letter sent to Art by H. H. Marshall, II, who lives in Falls Village, Conn., and who we assume has retired: "Life here in this beautiful country is most pleasant and we love it. It seems a long way from the M.I.T. days."

Tom Desmond sent us a clipping from his home town paper, the *Newburgh News*, listing the recent accessions to the Highland Falls Library, and it is a long list. Among the books are *South American Adventure* by Alice Desmond and *Course in Electrical Engineering* by Chester Dawes. Tom writes: "I am proud to have the privilege of knowing both of these distinguished authors." Likewise, the Secretary feels complimented to have been bracketed with an author who is as renowned as Alice.

We received a notice from the American Chemical Society News Service stating that a committee of 50 leaders of American industry and education had been formed to sponsor the American Chemical Society's \$3,000,000 building fund campaign. Dr. Charles Allen Thomas '24, President of the Monsanto Chemical Company, is chairman; and among the Tech men chosen are Dr. Bradley Dewey, X, and Dr. Vannevar Bush ('09 honorary). Most every month we are able to report on Brad's continuous activities: "He keeps on moving along."—CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. GEORGE E. WALLIS, *Assistant Secretary*, 185 Main Street, Wenham, Mass.

1910

It is with sorrow that I have to announce the death of three of our classmates: Samson K. Cohen on September 30, Louis O. French on May 19, and Frank C. Heard on May 1. Sam Cohen was a very loyal Alumnus, and in his funeral notice he requested the omission of flowers and said that expressions of sympathy may be made in his memory to M.I.T. Alumni Fund, Class 1910. The following from the *Boston Herald*: "Funeral services for the Colonel Samson K. Cohen, (U.S. Army Reserve, Retired) 70, of 35 Claffin Road, Brookline, will be held at Levine Chapel, 470 Harvard Street, Brookline, tomorrow morning at 10 o'clock. He died at Jamaica Plain Veterans Administration Hospital yesterday. Colonel Cohen was graduated from Massachusetts Institute of Technology in 1910, and aided in the Panama Canal Construction in 1912-14. He was retired from Stone and Webster Engineering Corp., with whom he had been associated for many years. In World War I, he served with the 101st engineers of the Yankee Division and was wounded at Chateau Thierry. In World War II he was with the Chief Engineer's Office of the First Service Command."

Louis O. French died after an operation. I roomed with Louis during our freshman year and we have corresponded at least once a year since we graduated. He studied law at Georgetown and practiced patent law in Milwaukee, Wisconsin.

I have no information regarding Frank Heard other than the notice received from the Alumni Association.

In my last notes I promised to include in this issue a letter from Ken Armstrong, who is living in Florida. The following is his letter, dated May 15: "I have been promising myself for some time to write something about myself for inclusion in The Review, but when I finally started to undertake the task today I was appalled to find that the last time I did so was more than four years ago. I had then been here for a year and was already active in the M.I.T. Club of South Florida, Masonic affairs, and civic activities in this suburb of Miami. The enclosed pamphlet, "Planning and Zoning in Opa-locka," tells the story of my activities along that line. Briefly it tells of my appointment under the new city charter as director of planning in July, 1954; of how I tried to get myself elected to the city commission in April, 1956; of the failure of that attempt (by not a very big margin, however); of my appointment to the planning council in June 1957, and subsequent election as chairman; and of what we have accomplished since then, and what we hope to accomplish if permitted to continue with our work. The recent city election was not satisfactory from our standpoint as the two members of the city commission who were elected in the recall of January 1957, were defeated for re-election; but so far the new commission has been co-operating with us, and we hope to be able to continue as planned."

"On the M.I.T. Alumni front, I was elected secretary of the M.I.T. Club of South Florida in February, 1955, having for some time previously been writing the Club notes for The Review; was elected president in December, 1956; and was retired from that job in March, 1958. I was appointed to the Educational Council in September, 1956, but so far have been assigned only one

school, Hialeah High School, which had its first graduating class last year. I shall probably continue with that work, and I intend to remain active in the Club. In my letter which was published in the July, 1954, Review, I said that I was building an addition to my son's house here, where I expected to live. The addition was completed about that time, and I lived in it a little more than a year. It is still there, and my son has remodeled it by inserting large, glass sliding doors in the rear wall, opening onto a swimming pool, all in the current Florida fashion. I bought myself a little, new house with two bedrooms, one of which I have fixed up as an office. I live in it all alone, taking my meals out, except breakfasts. This house is right across the street from the Opa-locka Masonic Temple, which makes my Masonic activities easy. I am also a regular attendant at meetings of the Opa-locka chapter, order of the Eastern Star. I still retain my membership in the chapter of the O.E.S. in Washington, D. C., in memory of my wife, who was worthy matron of that chapter 30 years ago. In addition, I belong to the Scottish Rite and the Shrine, which meet downtown in Miami, having transferred to each of them from Washington. On top of all these activities there are meetings of the Florida Planning and Zoning Association; some annual affairs such as the DeMolay conclave, which was held in Clearwater last year; and occasional meetings of other organizations in which I am interested though not active. So I have plenty to keep me busy, even though I don't go in for fishing or hunting or other sports.

As you know, I attended our 45th reunion in 1955, stopping over in Washington on my way back to visit my other son and his family. In February, 1957, I went to Havana to the get-together of the M.I.T. Club of Cuba, but otherwise I have not been out of Florida since our reunion. I belong to a couple of Republican Clubs; but since our municipal elections are nonpartisan and Dade County elections are also nonpartisan under the new metropolitan charter, I do not anticipate much activity along that line, though I would like to see a Republican Congressman from Miami. I would not, however, want to oppose my good friend Senator Holland, with whom I became very well acquainted in Washington and who, like many southern Democrats, is more like a northern Republican than a northern Democrat. My son Bill here is 40 years old and is on the criminal investigation staff of the county sheriff. His oldest son, whom we call Billy to distinguish him from his old man, is 20, and works for Aerodex, Inc., a firm that repairs airplanes and airplane parts. His older daughter Janet is 18 and is in this year's graduating class at Hialeah High School. The younger son, Jimmy, is 15 and is still in school. Then there is the baby girl, Valerie, who is three years old. My other son, Howard, who lives in Avondale, Md., just outside of Washington, is 35 and has three children; Nancy will be seven in October, Bruce will be five in July, and Betty has just turned three. That makes seven grandchildren, with a possibility of more to come, though I doubt it. No great-grandchildren yet. Janet was threatening to get married last year, but got over it. I am looking forward to our 50th reunion two years from now and hope to see you there, along with my classmates with whom I have

maintained contact through the years, Jack Babcock and V. H. Bien."

Carroll Benton sends me the class luncheon reports. Excerpts of the last month's report follow: "Last Wednesday, September 17, we resumed our monthly luncheons at the M.I.T. Club of New York (Hotel Biltmore) after a summer recess since June. We were honored by having Walt Spalding with us. Walt was in town with Mrs. Spalding for a few days before going to Boston to visit the Institute and then flying back to Honolulu. We were sorry that Mrs. Spalding had another engagement and was therefore unable to join us. In addition to Walt the following nine fellows were present: Al Hague, Gordon Holbrook, Carroll Shaw, Erford Potter, Fred Dewey, Henry Schleicher, Jim Tripp, Larry Hemmenway, and Yours Truly. George Magee and Ray Jacoby couldn't make it because of other engagements. All in all, a pretty good attendance, I think. Any time any 1910 men are in town on Wednesday of the third week in the month, we would be most happy to have them join us for lunch at the Club."

"Al Hague reports that he and Mrs. Hague are leaving next week in his boat for a slow trip to Florida, where they plan to spend the winter. We will miss Al at our luncheons this winter. He was one of our most faithful attendants. (Pleasant sailing and smooth seas, Al.) I think from what Walt Spalding told us the other day and from what Jim Tripp has told us from time to time that a letter from each of them to be included in the class notes regarding their travels around the world would make most interesting reading. (How about it, Walt and Jim?). As for Yours Truly, Mrs. Benton (Ann) and I have just returned from a 4,200 miles (five weeks) motor trip through the Maritime Provinces, including the Gaspé Peninsula of Quebec. (Not being much of a fisherman I did not take advantage of the famous trout and salmon fishing in the Miramichi and Restigouche Rivers in New Brunswick.) Had often planned to take this trip but never seemed to get around to it until this summer. Enjoyed the scenery, although the roads were not too good in places. Considerable road construction not only in Canada but in parts of northern New Hampshire and Vermont. We found the roads in Maine pretty good, however."

On September 29 Walt Spalding from Honolulu stopped in to see me. Walt and his wife were taking a couple of weeks off visiting friends in New York City and Boston. Mrs. Cleverdon and I had the pleasure of their company for a couple of hours; all too short, but their schedule was overcrowded for the time allowed.

I also had the pleasant surprise of having Dallas Brown drop into my office for a short visit. Dallas is now a superintendent of construction for the New York City board of education. The most astounding thing about Dallas is that he does not look his age. He made me feel ancient.—HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

1911

We lost one of our most loyal and active '11 men when Nat Seeley, II, passed away in Stamford, Conn., September 13. Born in Worcester, Mass., he prepared for M.I.T. at Flushing (N. Y.) High School. He entered with the Class of 1910 but graduated with

us and became an '11 man. As an undergraduate he was a member of Chi Phi fraternity, the Mechanical Engineering Society, Round Table, Walker Club, and Technology Club. He was on the 1910 *Technique* board, a member of the Tech Show 1910 chorus and the 1910 class day committee.

He was a member of the New York Stock Exchange from 1917 to 1941 and vice-president and treasurer of the Cornwall and Patterson Company, hardware manufacturers in Bridgeport, from 1939 until his retirement three years ago. An ardent yachtsman, he was an active member of the Cruising Club of America, of which he was a former vice-commander; a member of the Stamford Yacht Club; and a former member of the New York Yacht Club and the Woodway Country Club. He was an Episcopalian.

Nat and his charming and talented wife, the former Louise Talbot, were regular attendants at all 1911 five-year reunions; and both were very much enjoyed. They raised three fine sons, of whom they were always so rightfully proud: Franklin P., of West Hartford; Dr. Clinton B., of the Massachusetts General Hospital, Boston; and David S., of Arlington, Va. A sister, Mrs. Joseph A. Bell of Louisville, Ky., and six grandchildren also survive Nat.

We regretfully learned in late September of the death of another classmate—John R. Bowman, XI—at the Massachusetts General Hospital, Boston, on August 26 after a long illness. A resident of West Medford for the past 35 years, John was born in Billerica, Mass., and prepared for M.I.T. at Howe High School there. While an undergraduate he was a member of the Civil Engineering Society and the Biological Society. Upon graduation he went with the A. L. Smith Iron Works in Chelsea, but for the past 27 years he had been a structural engineer for the Commonwealth of Massachusetts. He and his wife, the former Mildred V. Johnson, were both active members of the First Universalist Church, West Medford. John is also survived by two daughters, Mrs. Francis Wing of Park Forest, Ill., and Mrs. Robert Reynolds of Fairhaven, N. J.; and five grandchildren.

An insight into the fine personality of the late Arthur Leary, XI, whose death we reported in last month's notes, is revealed by his widow, Mary, in a response to a letter of sympathy sent by President Don Stevens, II: "Young Arthur appreciates you kind words to him. He is in the third class at Roxbury Latin and doing very well. He was elected president of his class yesterday (September 18). That gave him a lift which he needed right now. His father showered attention on him—they were very close. He has many of his father's characteristics, for which I am thankful—he will be just as tall, if not taller."

A month ago we published an address change for Professor Harold E. Babbitt, XI, Civil Engineering Department, University of Missouri, Columbia, Mo. Here, in response to a request for details, is the story: "Elma and I regretfully left Rio in June, 1956 and by air and auto made our way to Seattle, where I went to work for Brown and Caldwell, consulting engineers of San Francisco. The job was to make a sewerage and drainage survey of "Metropolitan Seattle." We limited ourselves as to territory covered and made the March 1, 1958, deadline. By that time I had begun negotiations with the

University of Missouri, which culminated in my appointment here as "visiting professor of sanitary engineering" for the 1958-59 academic year.

"It's too soon yet to know how it will turn out, but it certainly begins most propitiously. The C. E. staff is most cordial; the university is picturesque and seems steeped in tradition and dignity; the students—that is, the graduate students—I find likable, industrious, and interested. I can tell you about the undergraduates after I've become better acquainted

"Our return—or continuation—in active professional life is a way of life far from our plans when we retired from the University of Illinois some years ago. We expected then to sit in the proverbial rocking chair on the porch; and maybe after six months or so, we might rock a little. Instead, we've been on the go unceasingly without a permanent home and, like the cuckoo, always living in some other bird's nest (furnished home). The fact is that retired life has proved more active, more adventuresome, and more revealing, possibly, than the 41 years at Illinois, where I usually knew where my next meal was coming from and where would be our bed for the night.

"On coming to 'Old Mizzou' we promised we'd be young again if it killed us. So, living up to the promise to ourselves, we attended this afternoon's football game (September 20). We had difficulty knowing which side was which; we stood up dutifully for the alma mater song, which sounded much like Cornell's *Cayuga's Waters*; at the start we hoped the visitors (Vanderbilt) would win (as they didn't have a chance), but when they began to look the winners (and were) we began to pull for 'Old Mizzou.' Must quit—this is getting too long. Please make a reservation for me at our 50 year reunion. It was 50 years ago we entered our sophomore year." Consider the reservation made, Harold; bring Elma, too!

From the September, 1958, issue of *Aero/Space Engineering* we learn: "De Florez Awards Established at M.I.T." And here is the story of another fine accomplishment of our own Luis de Florez, II: "A founder member of the Institute of Aeronautical Sciences, maintaining that ingenuity and judgement are talents deserving individual recognition, has made available two awards and four honorable mention prizes to juniors and seniors in the Department of Mechanical Engineering at M.I.T."

"The donor is Rear Admiral Luis de Florez, U. S. Naval Reserve (retired), I.A.S. fellow and an alumnus of M.I.T. in 1911. Admiral de Florez, believing that ingenuity in engineering has greater significance today than ever, presented the awards personally in May at a special Junior-Senior-Faculty dinner. The senior awards were one prize of \$500 and two honorable mentions of \$75 each, with the junior awards one prize of \$250 and two honorable mentions of \$50 each. Special Faculty committees were named to make final selections, Professor Taylor heading the senior and Professor Mann the junior jury. Professor K. R. Wadleigh, stressing that the specification of criteria for judging ingenuity is 'extremely difficult,' said that no written charge was made to either jury. He added, however, that jurors spotted ingenious ideas quickly in the many nominations made by both Faculty and students. The prizes will be

available each year and have been named by M.I.T. the Luis de Florez Awards."

In the magazine section of the August 31 issue of the *Boston Globe* appeared a two-page well-illustrated story titled "Kentucky Horses in Massachusetts," highlighting most effectively the practical "hobby" of Bill Coburn, VI, and his wife. "The William H. Coburns of Chestnut Hill have loved and ridden horses for years," the story starts. "Together they have fashioned a saddle horse farm in Hampton Falls, N. H., that is a model layout." It goes on to describe the early development of Bill's farm—named The Blue Chip Farm in honor of its oldest male horse, a gelding which has won many admirers on the horse show circuit.

"Today there are 28 head of fine horses grazing in superb fields and paddocks," the story continues. "Timothy and other rich grazing food now grows where enormous rocks once dominated the terrain. Coburn, a Boston investment counsellor, removed at least 100 glacial boulders, some large enough to make Plymouth Rock look like a pebble. The Coburns have proved that fine show horses can winter as successfully in New England as in Kentucky.

"In 1941 the Coburns sent a successful show mare, Lindsay Lane, to Grasslands Farm in Danville, Ky., to be bred. They expected to raise one nice riding horse, but Lindsay Lane's first foal won the yearling filly class at the Kentucky State Fair; so eventually, after many visits to Kentucky, the Coburns began to dream of a Kentucky-type breeding farm in New England. Now there are grown horses bred at the Hampton Falls farm ready to show; and George Butts, trainer, is taking great pride in 'finishing' farm-reared colts, to show what they can do. The chief interest at Blue Chip Farm has been in raising colts.

"The process of making a successful Kentucky-type breeding farm in New England poses problems not found in Kentucky. For instance, rock-free pastures are a must with young horses. Lumber and labor for fencing are much higher here and the winters are longer. As in Kentucky, the brood mares live outdoors all year 'round, but they are brought in during foaling time. A shelter has been built for them in the barnyard, with the yard offering protection as it is bounded by high, very ancient, stone walls. In good weather a gate is left open to a pasture and the mares stay out most of the day, except at feeding time and at night, or in a bad storm. These mares winter excellently in spite of the New England weather." Very interesting, Bill.

It was nice to learn just before this mid-October notes writing that our honorary '11 man, Tom Desmond '09, was honored in Manhattan. Jim Cambell, I, wrote: "Last night (October 9) Toni and I attended the annual awards dinner of the New York State Society of Professional Engineers at Hotel Statler. Tom Desmond was the guest of honor and received a plaque commemorating his distinguished services to the engineering profession. Naturally Tom sat on the dais, but his distinguished authoress wife, Alice Curtis Desmond, expressed a preference for sitting with us at a nearby table. Also at our table were Mollie Scharf's ('09) son, Samuel '43, and his lady. We were sorry to hear that Mollie's wife was prevented from attending the dinner, since she was

recovering from the effects of a fall. I was seated at the right of Mrs. Desmond and enjoyed our conversation, particularly all the nice things she said about you and Sara. It was fine to see Tom so signally honored."

Letters of encouragement about "coronary comebacks" continue to pour in from classmates and friends, including an attractive card from Ed Vose, XI, from Mexico City, where he is "down here for a little vacation trip." Fred Daniels, VI, advises to "take it easy and don't worry about anything"; Bill Warner, I, says "We need your inspiration, so don't fail us"; Syd Alling, VI, puts it, "Tough for an active man to loaf, but steady does it." All of these have helped immeasurably in my improvement and allow my doctor to let me take on more and more physical activity. President Don Stevens, II, writes every week or 10 days—great! Keep 'em coming; they help on class notes, you know, when you include news about yourself or other classmates.

Among junior '11 men: Oz Stewart '39, is greatly enjoying his work as editor, "Buildings and Facilities," for McGraw-Hill's *Factory Management and Maintenance*. George A. Cowee, Jr., is vice-president for Sales, National Homes Corporation, Lafayette, Ind., makers of "quality homes, priced to sell, on the right terms."

Professor O. Robert Schurig, VI, about whose work at Union College we wrote in last month's notes, wishes his mail address to be 1204 Wendell Avenue, Schenectady 8, N. Y., and Edwin Pugsley, VI, is back at 76 Everit Street, New Haven, Conn. These notes will reach you just in time for you to take care of your annual contribution to the M.I.T. Alumni Fund now, if you want it deductible for 1958; also just in time for our heartiest good wishes for a Merry Christmas and happy new year to you all!—ORVILLE B. DENISON, Secretary, Wellsweep, Box 11, Cornish, Maine. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

1912

Eric Kebbon has retired from McKim, Mead and White, architects, in New York, and is now living at 39 Main Street, Stonington, Conn. His chief interest is gardening, and they have a very attractive home and garden to work upon. Eric's daughter, her husband, and their two boys are living in Hartford, a short driving distance away.

Ralph Symonds of Marblehead has partially retired from the New England Trawler Equipment Company, as he has brought his son along actively to manage the business. He goes up two or three days a week and reports a sharp pick-up in orders. To occupy his time he has taken up oil painting. Landscaping and seascaping are his main subjects. He has asked me over to see his work, which I certainly intend to do.

Ed Homan has retired to his old home on State Street, Marblehead, after being with the General Electric Company in Fitchburgh for many years. His health is excellent and he is active as treasurer of the Layman's League and also in the Masons and American Legion.

George Lee Paullis recently passed away in Detroit. His wife writes that up to the time of his retirement in January, 1955, for more than 30 years he had been experimental chief engineer with Chrysler, being responsible for

all paints, primers, and finishes used on Chrysler cars throughout the country. After retirement he was in the hospital much of the time with heart attacks and strokes, finally passing away on July 16 this year at the age of 69.

Johnny Noyes reports that his son Theodore A. has entered M.I.T. this fall, studying towards his Ph.D. in science. He is the recipient of the National Foundation Faculty Award and is now living in Arlington, Mass.

Jonathan H. Noyes, another of Johnny's sons, graduated from M.I.T. in 1942, received his law degree from the University of Texas after serving in the Armed Forces during the war. He is now an executive of the Muir Investment Corporation, San Antonio.

While in Europe this summer Mr. and Mrs. Johnny Noyes visited their son Baldwin D. Noyes, who is now in the U. S. Army and stationed in Germany.—FREDERICK J. SHEPARD, JR. Secretary, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, Assistant Secretary, 455 West 34th Street, New York, N. Y.

1914

From September 11 to 13 Charlie Fiske, Herman Affel, and your Secretary attended the conference at the Institute in connection with the Alumni Fund and special fund raising. Art Peaslee was unable to attend because at that time he was on an around-the-world trip. Our particular interest was in the plans used by the 50 year classes for their gifts. All contributions from 1940 to 1964, together with bequests, will be classed as the gift. Special efforts will be made during the next five years remaining before our 50 year reunion. Charlie, Herman, and your Secretary also took the occasion of this conference to make plans for our 45th reunion to be held at the Publick House at Sturbridge, Mass., on June 12 to 14. You will receive detailed information this winter from your class officers.

Art Peaslee has sent back cards from Australia, India, and Tahiti, suggesting this latter place for our reunion. By the time you read these notes Art should have returned from his world-wide trip. You should perhaps have received a letter from him urging funds for our 50 year gift.

During the past summer Charlie Fiske attended the 100th anniversary of his fraternity, Delta Tau Delta, at Pittsburgh. Our classmate Levi Bird Duff, also a Delta, was there. Bird, who is commissioner of Allegheny County Department of Works, took Charlie around to see some of the new bridges and roads whose construction he had supervised.

While your Secretary was traveling in the Far East, Herman Affel, our Assistant Secretary, modestly told you of his own retirement. He did not, however, mention the article in the *Bell Laboratories Record* telling of his many achievements during his 42 years with the Bell Laboratories. He, together with a close associate, is credited with the invention of the coaxial cable system. They have been granted 123 patents in the field of wire and radio systems. Although retired, Herman is doing some consulting work for the neighboring telephone company in Canada. He has closed his home in New Jersey and is making his home in the Belgrade Lakes district of Maine.

In the notes of last month the retirement of Professor Leicester Hamilton was re-

ported. Leicester is still continuing with the Chemistry Department at the Institute, but on a half-time basis. This fall the Faculty and staff of the Chemistry Department held a reception for him, at which time he was presented with an automatic wrist watch. Hamilton has been associated with the Department ever since his graduation in 1914.

Word has just been received that Donald W. Douglas is the recipient of the Franklin Medal for 1958. It will be recalled that Douglas was also elected last June as a five-year term member of the M.I.T. Corporation. He unfortunately was unable to attend the October 6 meeting of the Corporation. Ray Dinsmore, who is also a term member, flew on from Akron to attend this meeting. Ray expects to be with us at our 45th reunion.

Only last month these notes carried the report of the death of Joseph H. Currier. This month we have the sad duty to report the death on June 20, 1955, of Philip M. Currier. Phil was not a relative of Joe. Phil prepared at the Lawrence, Mass., High School. When at the Institute he took part in track activities. During World War I he served as a lieutenant in the Signal Corps. At the end of the war he rejoined the General Electric Company at Schenectady, where he remained until his retirement. On June 14, 1919, he married Esther Borg, who, together with one son, survives him.—CHARLES P. FISKE, *President*, Cold Spring Farm, Bath, Maine. H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge, Mass. H. A. AFFEL, *Assistant Secretary*, R. F. D. 2, Oakland, Maine.

1916

We note with pride that two 1916 men have been nominated and renominated respectively for position of Alumni member on the M.I.T. Corporation Visiting Committee: Charles J. McCarthy for the Department of Aeronautical Engineering; Joseph W. Barker for the Department of Modern Languages. The Corporation's Visiting Committees are usually composed of nine members: three members of the M.I.T. Corporation, three non-M.I.T. members chosen by the president, and three M.I.T. Alumni members recommended by the Alumni Association. Ordinarily the committees meet once a year. The purpose of the committee is to give the Department the benefit of advice and opinions of an interested group other than those connected with the M.I.T. Faculty or Administration. Also we note with pride that Steve Brophy is this year's selection of the M.I.T. Club of New York for its Silver Stein Award. This is an annual event of top importance in the New York area. As we write this, we understand that Steve will be the center of interest at an affair to be held by the New York Club on November 17. Congratulations of the Class to Charlie, Joe, and Steve! Speaking further of celebrities, Vannevar Bush was the featured speaker at the fall meeting of the M.I.T. Club of New Jersey in the Suburban Hotel in East Orange late in September—an unusual opportunity for Jerseyites to hear not only the chairman of the Corporation of M.I.T., but also one of our country's most renowned scientists and administrators.

According to notes received, some people haven't gotten over the storytelling bee

between Jim Evans and Paul Duff at the reunion in Chatham Bars Inn, with more than chuckles for the group gathered around the fireplace. They should be on television, it is argued; their matching of stories would bring much more entertainment than many of the programs some people watch. Asked for a follow-up set of observations on the 47th reunion, Jim Evans, the old reliable who was first to arrive at the reunion and last to leave, came across with this: "Number reporting, 29; who had most fun, Ralph Fletcher; who worked hardest, Bob O'Brien and Harold Dodge; tallest storytellers, Dr. Paul Duff and Bob Wilson; best entertainment, 1938's band, we stole it; 1916's best marching song, '76 Trombones'; biggest event, the class parade into the dining room; the best golfer, Bob Wilson; best looking, Paul Duff's son, Kevin; best friends, the ladies; most technical, George Petit; most traveled, the Brophys; Class hermit, Bob Wilson, he stayed in his 'igloo' most of the time; shortest stay, Jack Burbank, who arrived once, stayed 25 minutes and left—and he lives only a short distance from Chatham; most talked about, those 1916-classmates who live within an hour's ride of Chatham and couldn't get there."

Wes Blank, back in June, explaining to Ralph why he wasn't going to be able to attend the reunion, mentioned that Don Webster had been down in Charlottesville, Va., sort of looking around for a retirement place, but had not made any decision. Wes goes on: "He was Chemical but did not follow it. He wrote his thesis with Maverick, who is also located in Charlottesville. Liddell is retired (I believe in Arlington) and Pyle, from whom we received a Christmas card in 1957, is in a Philadelphia suburb." Ralph Fletcher reports a letter from Howard Claussen following up the reunion in which he writes of the fifth reunion, way back in 1921. Says: "At the dinner I was sitting next to Mrs. Wilson, and she mentioned that she was at the fifth reunion held at Cotuit Inn, which I think that I sparked inasmuch as the property at that time was owned by my father-in-law, and it was an ideal place for a small reunion. I am enclosing two fairly decent prints of the fifth, one of which you may wish to send to Harold and the other to Mrs. Wilson, with my compliments. Mrs. Wilson is sitting in the middle of the front row, and the small child whom she seems to be holding may or may not have been her daughter, who was present at the recent party at Chatham Bars. Despite the years which have passed, you will notice that a lot of the faces look very familiar, including your own; those of Arvin Page, the Freeman brothers, Tom Berrigan, Rusty White; and many others. I took the photo so am not in the picture. The young lady marked 'Miss Gifford' in the front row is the present Mrs. Claussen."

Some time back we received a notice of an extremely important event—especially to Bill. It was the announcement of the marriage of Mrs. Jewell E. Floyd and Mr. William J. Barrett on the 22d day of March. Bringing these two families together gives them, we understand, five children—four boys and a girl. Congratulations, Bill, and all the best wishes of the Class to the bride. We've also had word—this was back in September—from Earl Mellen, regarding some of his and his wife's vital statistics, and tell-

ing of the arrival of their 13th grandchild: name, Gregory Bruce Walsh. In the September 22 issue of *Electronic News*, we also saw a good-looking picture of Earl on the occasion of the annual Instrument-Automation Conference and Exhibit in Philadelphia. If anyone wants to borrow the picture, please advise. The caption reads: "Sales Talk: Discussing their firm's sales presentation are, left to right, Ross W. Gilbert, V.P. research, Daystrom-Weston group, subsidiary of Daystrom, Inc., Newark; F. X. Lamb, V.P. chief engineer, Weston Instruments division; Howard Mellen, production analyst, Weston division; and Earl Mellen, board chairman, Daystrom-Weston division."

We are very sorry to report the death of Warren Ames on September 12. Warren was president of the B. C. Ames Co. of Waltham, makers of precision gauges—gauges that those of us in the quality control field know are tops for quality in the field. We also regret to report that since our last writing we have had word of the passing of William L. Ogden of Washington, D. C., in August; Earl Hauman in Lewiston, N. Y., in August; and Colonel William G. Brown of Rye Beach, N. H., late in September. Will Brown was technical director, Research Directorate, Wright Air Development Center. Bill Leach, who was at his farm in Youngstown, N. Y. writes a bit of detail regarding Earl Hauman's death—Bill and his wife called on Mrs. Hauman the evening before the funeral. Says Bill: "They had guests for dinner the night of the 26th, and Earl was in good spirits and apparently was feeling all right. Ray Brown told me at the funeral services that he called the night of the 26th to return a book, and Earl looked all right but somewhat tired. Louise told us that when Earl retired he did some reading, in bed. About 3:30 A. M. she heard him make a funny noise and thought he was snoring and punched him. When he did not respond she found he had passed away. The cause was diagnosed as coronary inclusion. The Haumans were planning on starting a trip this week to the West Coast to visit their daughter. Louise took us out to see Earl's garden on the side of the escarpment. It is one of the nicest and prettiest well kept small gardens that I have ever seen. It showed a side to Earl's character that I had not known before." (Bill returned to Austin, Texas, in October.) Earl was vice-president and general manager of the Exolon Co., manufacturers of abrasives and refractory grains in Tonawanda. After graduation he joined the Norton Co. Electrochemicals Division in Chippawa, Ontario, and left in 1926 to become manager of the Exolon Co. plant in Thorold, Ont. He became V. P. of Exolon in Tonawanda eight years ago and has been very active in community affairs—Rotary, Chamber of Commerce, Community Funds.

Emory Kemp, who is coming along nicely as this is written (October 13), expresses gratitude for the many letters he received while hospitalized in Pocasset during July and August following a heart attack. He mentions a fine letter from Hovey Freeman, who had a like experience last January but was again feeling fine. He mentions especially a long letter from Dave Patten: some of the thoughts are so good, he feels they should be passed along. Dave says: "I hear you have been in the 'pest house' as we used to designate hospitalization in the Army. However, these modern medical institutions

are really a haven in many ways. Now I trust, especially on such a beautiful day as this is, that you are back in Wellfleet, that town famed for the Kemps and the Pilgrims. I'm sending this greeting there anyway, with the thought that we old classmates must cling together under the banner of our alma mater. Except for a phenomenon like the famous 'quints,' most of us make our world entry pretty much alone and subsist on pap with the feeble aid of sign language; but thanks for the tie that binds us we don't have to leave in that manner. And there's a Longfellow quote that fits us in these days that runs like this: 'For age is opportunity no less/Than youth itself, though in another dress,/And as the evening twilight fades away,/The sky is filled with stars, invisible by day.'

"In fact there are a number of gems that come to my aged brain, as I jot this down, such as MacArthur's famous saying about old soldiers, only I would change that to 'old gardeners never die, they just spade away.' That's what the famous Dr. White recommends for your ailment; in fact he even advocates golf for Ike and bicycle riding. And then there is the advice, author unknown, for those over 70: 'Pamper the body. Prod the soul./Accept limitations, but play the role./Withdraw from the front, but stay in the fight./Avoid isolation. Keep in sight./Beware of reminiscing (except to a child)/To forgetting proper names be reconciled./Despise not solitude. Let no one condone./Cultivate interests enjoyed alone./Refrain from loquacity. Be crisp, concise./And regard self-pity as a cardinal vice.' So much for this soliloquistic gallimaufry. The best things in life always lie in the future." Dave goes on with more philosophy and some predictions which also are of interest, but we'll save some for a column-rainy-day.

George Skolfield, a native of Brunswick, Maine, and a member of our Class for two years following his graduation from Bowdoin, was signally honored last June. Before his death in 1941, he had a distinguished career: first with the Chester Shipbuilding Corp. at Chester, Pa.; then to California, where he became vice-president of Merritt Chapman and Scott; and finally in business for himself. In June, the George Lincoln Skolfield, Jr., Professorship was established at Bowdoin College as announced by President James S. Coles. The department in which this professorship is held will change and will be determined from time to time.

Bill Drummey's work was in for a headline in a Haverhill paper last July; it read like this: "Where Most Fail, Architect Firm Beats Its Budget. All architectural and engineering professional work for the John Greenleaf Whittier School was done through the offices of William W. Drummey of Boston... A particularly unusual item on the school was that the building was completed for less money than the contract called for—without any reduction in the space allocation or in the educational program. This was possible because there were no 'extras' in the common meaning of the word." This information came in a clipping sent us by Alumni headquarters. In reply to a request for some firsthand news, Bill says that work is his chief fun and happily he has plenty of it. Says his headfull of white hairs is no end of an advantage over much better men in the same profession. He first started practice

at his Boylston Street address over 35 years ago. Now his office is working on "four schools, an armory, four state aided housing projects for the aged (a most interesting self-supporting piece of social legislation, in action in very few states), a hospital, two laundries in hospitals, and lesser stuff. As it may rest with me, I shall never retire; but I do give acknowledgment to accumulated years by working from Monday noon through Friday noon. Then off to my place, all the year round, on Cape Cod. Believe it or not I, whose chief sport was boxing, raise rather good roses, out of what seems to be 50-50 sand and loam. I serve on his current excellency's military staff, which is no onerous task and that is about all militarily. A grateful government pays me \$19.00 a month—tax free—as a 10 per cent disabled veteran, but I have been relegated to the Reserve, in the same fighting category with the women and children. I retired with eagles. It seems that grandchildren—of which I have three—are much stronger than they used to be. Last Saturday I romped with them on the lawn and was pleased to take a nap afterwards while the little monsters went looking for another victim." Bill hopes toward the end of the year to wander south on a freighter for a few weeks. Says he doesn't care where it goes or stops; for with a case of books and a case of Bourbon, speed and destination are only details.

A clipping from Providence headed "700 Books Donated for Proposed Library" really refers to Maurice Holland who, through his sister Mrs. M. Veronica Hurley, librarian of the North Providence Union Free Library for more than 20 years, has made this donation from his personal collection to the new library planned for North Providence. "Volumes in the collection cover the subjects of science, business, exploration, and adventure, and include personally autographed editions by many nationally known figures... Mr. Holland has written four books, the most recent of which, *Management's Stake in Research*, is scheduled for publication next month (September). He has contributed articles to magazines and radio. A native of Providence, he served as director of the National Research Council's division of engineering and research until he founded his own firm. He now acts as consultant on research management to industrial companies, non-profit research foundations, and to the U.S. and foreign government agencies."

The October class luncheon at the Biltmore in New York brought out Joe Barker, Steve Brophy, Harold Dodge, Sid Hall ('43, son-in-law of Joe Barker), Ted Parsons, Peb Stone, and Francis Stern. Francis told of catching his daily limit of salmon in Quebec: the largest one, 28 pounds.

And now to close with a request that you send in your paragraph or two or more to help—not only to keep the column full but to keep other members of the Class informed. Note: Joe Barker says consider closely what he says when he writes you about the Alumni Fund. And to all: A Merry Christmas and a happy new year!—HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N. J.

1917

"Hub to be the Capital of Free World";
"Dulles, Spaak to Speak—First of N.A.T.O."

Dignitaries arrive here (Boston) for Assembly." These headlines appeared in Boston newspapers on September 21 reporting the week-long assembly of more than 80 dignitaries from North Atlantic Treaty Organization countries. Host for the Assembly was the Boston Regional Conference on N.A.T.O. Affairs, Inc., whose president is none other than our Harry A. Wansker of Newton. Harry is reported as saying: "The meetings are expected to be a major contribution to President Eisenhower's ideal of 'people to people diplomacy.'" This assembly was believed to be the largest international conference ever to be held in Boston. Speakers were: Secretary of State Dulles; Paul-Henri Spaak of Belgium, Secretary-general of N.A.T.O.; Lester B. Pearson, former Canadian Minister of External Affairs; and Randolph W. Burgess, U. S. Ambassador to N.A.T.O. N.A.T.O. panels open to the public were held in M.I.T.'s Kresge Auditorium. Congratulations, Harry. Harry has been in charge of government relations for United-Carr Fastener Corp.

Another classmate in the news who is making good preparations for retirement is Philip B. Watson. Phil, who was plant manager of the Wallingford, Conn., branch of American Cyanamid Company, has been named chairman of the Department of Industrial Engineering at New Haven College. He is one of four full-time instructors on the college faculty according to an announcement by the dean. The news report continues: "During World War I, he served under James B. Conant... in the war gas production division of the U. S. Department of the Interior. He later was associated with the Chemical Warfare Service. He was employed by the Commercial Research Co., in Flushing, N. Y., from 1919 to 1921; and the following three years he was laboratory director with the Union Carbide Corp. Since 1924 he has been employed by the American Cyanamid Co., in Bound Brook, N. J., and in Wallingford, Conn."

Don Severance of the Alumni Office informs us: "The following have been re-nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee: Francis V. du Pont for the Department of Civil Engineering; Raymond Stevens for Sponsored Research. Stanley M. Lane has been nominated to serve on the Medical Department's Visiting Committee. For your information, the Corporation's Visiting Committees are usually composed of nine members: three members of the M.I.T. Corporation, three non-M.I.T. members chosen by the President, and three M.I.T. Alumni members recommended by the Alumni Association. Ordinarily the committees meet once a year. The purpose of the committee is to give the department the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration."

Supplementing Ray Brooks's Class Agent letter of October 1, the following figures from the annual report of the Alumni Fund are of interest for our Class: received in 1957-58, \$74,950; received in 1940-58, inclusive, \$372,265. Per cent of active class roll contributing, 45; amount contributed, 1958, \$7,181; average contribution, \$42.50. For our age group we are not too far out of line in per cent contributing, but we are several points low in our average contri-

bution. The average contribution for 1915 was \$58.00; 1916, \$111.00; 1918, \$38.50; 1919, \$43.50.

The first fall get-together for the Tech Club of Northern New Jersey—at which Van Bush was the very interesting speaker—brought out the following 1917 men: Ray Brooks, Dix Proctor, Ed Aldrin, Ken Lane, Bill Hunter, and your Secretary. Ray Brooks is hot on the trail of a farm in Vermont, Dix Proctor is full of plans for a trip to Japan and perhaps around the world, Ken Lane is flying back and forth to Europe on patent problems, and Bill Hunter is reliving his last summer's trip to Europe.

A recent bulletin concerning the American Mutual Liability Life Insurance Co. showed pictures of their board of directors, one of whom we recognized as Bob Erb, President of Melville Shoe Corporation.

Today's best smiles: "A man finds out what is meant by a 'spitting image' the first time he tries to feed cereal to his grandchild." And, "Grammy, am I descended from a monkey?" "I don't know, dear, I've never met your father's people."—W. I. McNEILL, *Secretary*, 4 Hillcrest Avenue, Summit, N. J.—STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

December is the month when winter punches autumn into oblivion, but the wind-up for that punch this time must go back to June in order for us to report the brethren who attended Alumni Day: Mr. and Mrs. Sam Chamberlain, Mr. and Mrs. S. V. Chamberlain, Mr. and Mrs. Lester C. Conner, Mr. and Mrs. Yale Evelev, Mr. and Mrs. Saxton W. Fletcher, Mr. and Mrs. Clarence C. Fuller, Mr. and Mrs. Albert Haertlein, Mr. and Mrs. Alan F. Howard, Mr. and Mrs. Julian C. Howe, Mr. and Mrs. Harry L. Katz, John W. Kilduff, Nathaniel Krass, Mr. and Mrs. Harry C. LeVine, Mr. and Mrs. James E. Longley, Miss Gretchen A. Palmer, Mr. and Mrs. Edwin F. Rossman, Mr. and Mrs. Alan B. Sanger, Mr. and Mrs. Max Seltzer, Mr. and Mrs. Philo S. Shelton, Mr. and Mrs. Arthur Smith, Carlton E. Tucker, Mr. and Mrs. Armin A. Uebelacker, Professor and Mrs. Harold C. Weber, Mr. and Mrs. Ralph L. Whitcomb, Royal Barry Wills.

Winter has brought Franklin van Zelm down from his mountaintop resort in Harrison, Maine, to the quiet college community of Williamstown, Mass., where he creates his new comic strip "Farnsworth." Van is a gentle soul who knows there is a good deal of well-thought-out ruthlessness in this world. As for him, he would prefer to contribute to happiness and tranquility. Hence his devotion to the creation of imaginative characters whose behavior will amuse and divert, even on a winter's eve. He arrived at this way of earning a living by devious routes, including purchasing for the U. S. Shipping Board and the real estate business. Theodore Braaten is also concerned with the happiness of others, but in a dissimilar way. As general manager of the public utilities of Norwich, Conn., his object is to provide consumers with gas, water, and electricity at the best rates possible. Ted has had this job, under a city manager, since 1946. Among other things, he sees that the Norwich shade trees are properly trimmed so

that no snow-laden branches will break or short-circuit the wires, causing an outage. He was in Europe during the late, lamented unpleasantness as a utilities specialist, serving partly in the American sector of Berlin.

Don Goss, in a letter to the *Boston Herald*, shows erudition worthy of the Harvard degree he collected without sacrifice or effort. Sez he: "On a recent television show, an admiral, talking about the trip of the *Nautilus*, tried to describe the downward projecting ridges of ice under the Polar cap as 'pinnacles' of ice. 'Pinnacles' by dictionary definition implies an upward projection. There must be a better word; or, if there isn't, let the lexicographers dip into their Latin or Greek and come up with 'stalactice' or 'ridgereverse.' Of course the Germans could whip up a beaut, like 'Polarkap-peneisuntengehenfahrt.'"

William C. Foster has been renominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for Sponsored Research. The Corporation's Visiting Committees are usually composed of nine members: three from the Corporation, three non-M.I.T. members chosen by the president, and three M.I.T. Alumni members recommended by the Alumni Association. Ordinarily the committees meet once a year. The purpose of the committee is to give the department the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration; and they couldn't find a better man than our own Bill, who never got a degree because he refused to be dragooned into repeating a term after returning from military service in France during World War I.

Courtesy of Tom Brosnahan, we have a long article from the *New York Times* of July 13, the gist of which is that Bill Wyr believes parallel railroad lines should consolidate. He is presently actively engaged in bringing about a few such mergers: for example, the Delaware, Lackawanna, and Western; the Erie; and the Delaware and Hudson. One of Bill's two sons is a corporate attorney, the other an executive in a west coast concern making airplane parts. Julian Avery's daughter, Juliet, was married on September 20 to Michael H. Sherman in Greenwich, Conn. On Labor Day Alexander Magoun nearly lost an eye. While he was chopping kindling a stick flew, breaking the right lens of his glasses and driving some of the pieces into the eye. Carolyn drove him to the Boston Eye and Ear, where nine stitches sewed the eye back together. At first he could tell only light from darkness; but a month later, because neither the pupil nor the retina was damaged, he could see almost as well as before. They do say that chopping wood warms a man twice. Here was one instance where it produced a real chill. Greetings by post card have been received from Al and Stella Grossman when they were in Belgium, and from Gretchen when she was in Hawaii—to which she expects to retire one fine day. Alan Sanger asks whoever took the group picture at Falmouth last June to please contact him.

December is the last month of the year. It comes in life, too, as well as on the calendar. Belated word, minus any details, comes that Edwin S. Fields, Jr., died sometime in 1950. Henry Barber has also gone, though I do not know when. On May 26,

Colonel Edward B. McCarthy, the retired former commander of Fort Devens, went to his reward. Stanley H. Franklin, Director of Research for the Fram Corporation, died June 16 at his home in Barrington, R. I., after a short illness. He was a lieutenant in World War I and a major in the second one. He is survived by his wife, a son, and a daughter. Joseph Roy, who will be remembered by those who took the speed-up Course in Naval Architecture, died on July 23. He was president of the contracting company his father had founded; had been president of the Building Trades Employers Association of Springfield, Mass.; and was for eight years a member of the Board of Public Works of Springfield. He served as a lieutenant in the Navy in World War I and as a commander during World War II, ending as assistant industrial manager of the Bremerton Navy Yard at Seattle, Wash. Raymond P. Miller died at his home in Swampscott, Mass., on August 2. Since 1930 he had been a broker for the New England Life Insurance Company—a far cry from his education as a mechanical engineer. Ray is survived by his widow, two sons, and a daughter. On August 18 E. Barnes Hopkins '25, of the Employers Liability Assurance Corp., died at the Malden (Mass.) Hospital after long illness. He leaves a widow and two sons. Finally, Samuel Mann died on September 6. Born in Romania, Sam was brought to the United States when he was less than one year old. In 1918 he received a degree in Electrical Engineering and immediately entered the Army Air Corps. After World War I he served for a time as a wireless operator on ships, and in 1922 was graduated from Columbia University Law School, subsequently following the legal profession.—F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N. H.

1919

Christmas Greetings and a great good year to you all! Hope you're not forgetting that now is the time to pledge your gift for our 40th reunion gift to the Institute! If you haven't given yet, please do so at once; and if you can extend the amount you have already pledged, do that. Ours is the first 40th reunion gift in the history of M.I.T., and we want it to be a banner one of which we can all be proud. Three years in which to pay, you know, so let's go all out!

A card from Kenneth Wood (5311 Gladstone Place, Normandy 21, St. Louis, Mo.) says: "Since 1955 have been located in St. Louis, still with Rexall Drug Co., Purchasing Department. Hope to retire in a few more years and return to good old New England. Regards to all." To paraphrase, You can take the boy out of New England, but you can't take N.E. out of the boy!

Leon Weaver pens in from Cape May, N. J., that he likes his new location, and he sends his best to you all.

Sad news via the Alumni Office and a clipping from the *Hartford* (Conn.) *Independent-Democrat* telling us that George G. Fleming died suddenly on August 31 at his home in Washington, D. C. Burial was in Arlington National Cemetery, Arlington, Va.

We are sorry not to have further news items for you; but if you all don't send in news items we can't pass them along to the rest of the Class. SEND IN THE NEWS. Happy new year!—E. R. SMOLEY, *Secretary*, The

1920

Recent visits with Norrie Abbott, Ed Ryer, Bob Patterson, Buck Clark, and Mal Lees convince me that the Class has lost none of its sparkle and youthful spirit if these classmates are representative, and I think they are. A full-page pen-and-ink drawing of Phil Brown in the Hartford Fire Insurance Company magazine indicates that here is another one who has lost none of his distinguished good looks. Phil has been with this company ever since graduation, starting as a field engineer, then specializing at the home office on the insuring of bridges and tunnels, along with supervising the company's business in Canada, Cuba, Puerto Rico, and the Virgin Islands. In the middle Thirties he was appointed office manager and was later called upon to supervise the erection of a large addition to the Hartford's home office. He became secretary of the company, then assistant vice-president, and finally vice-president and a member of the board of directors. He is presently chairman of the directors audit committee. As a hobby, he has taken up electronics and has built high-fidelity equipment, even a transistor radio.

Ed Burdell has been renominated by the Alumni Association as an Alumni member on the M.I.T. Visiting Committee for the Medical Department.

Congratulations to Dr. C. Richard Soderberg, our eminent Dean of Engineering, who received a doctor of science degree at Tufts University last June.

I am pleased to report that our eminent fund representative, Al Burke, has recovered from a recent trouble with his shoulder and has even resumed his tennis career. I suspect that most of us gave up tennis a quarter century ago or so.—HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

Activities of the Class of 1921 continue at the feverish pace which President Ray St. Laurent has always set and which the rest of your officers and committee members do their best to maintain. The many letters and phone calls which Ray has originated to this secretarial base within the past month would surprise you not only for sheer quantity but also because they represent a mere fraction of his total of messages, visits, and meetings with and in behalf of members of the Class, its operating personnel, and others. Your thanks for the flawless scheduling and performance of our most enjoyable regular and special Class functions can, in large measure, be directed to Ray.

Latest announcements around the friendly 1921 fireside are that Irv Jakobson will serve as chairman of our 40th reunion gift committee and that Lark Randall has become assistant class agent. A warm welcome to both of them. As you know, Mel Jenney is heading our 40th reunion committee for the concurrent celebration of our anniversary and Technology's centennial in 1961, for which the Institute has fallen in line with our plans of several years ago to make the 40th the BIG reunion. Beginning with the Class of 1921, Technology will officially ex-

tend special honors to 40-year classes; and we know you will generously help Irv to amass in the intervening years a record-breaking gift for all of us to present to M.I.T. on the start of the Institute's second century of helping others as it helped us. We know everyone joins us in good wishes to Irv and Lark as members of the group which is doing so much for the Class and Technology. In his new capacity as right-hand man to that stellar class agent, Ed Farrand, you will be hearing from Lark from time to time in connection with the annual Amity Fund, through which you help support Technology's broad needs and also subscribe to *The Review*—we hope you'll continue that subscription and the interest it implies. Irv will work closely with Ed and Lark and with Mich Bawden, who heads our long-term special gifts committee.

A most welcome letter from Dave and India Woodbury forecast a trip from Ogunquit, Maine, for a brief sojourn in Gotham-on-the-Subway. Fortunately for Maxine and your Secretary, they fitted in an overnight visit to our home in Glen Ridge, N. J. We succeeded in getting George Chutter to join us the evening they arrived for an enjoyable Hexalpha reunion, plus a showing of Bob Miller's excellent colored slides of last February's 1921 reunion in Havana, Cuba, supplemented by Dug Jackson's Kodacolor views of the same event. George and Muriel Owens were unable to be with us as were the Sumner Haywards and Jean and Grover Paulsen '40, who had been in Cuba at the time of our reunion. Dave is always the master of anecdote and relates any story with the fascination which has earned him top rating amongst writers. He brought a vial containing a few grains of gold, the result of some 100 man-hours of panning in Maine, which he says was a source area for that metal in colonial times. Dave's literary efforts continue with the completion of text for his 14th book and plans for numerous articles. His 13th book, *Around the World in 90 Minutes*, recently published by Harcourt, Brace and Company, New York, is a fabulous true story of the man-made moons, including sputnik, and is must reading in this rocketing space-conscious world. The *Reader's Digest* for September carried an article by Dave on "Basic Facts about 'Fallout,'" which summarizes extensive tests that prove the fallacy of any fear of radioactive fallout from atomic bomb tests. Come see us again, Dave and India.

Bob Miller has been recuperating from surgery and is long since back on the job in Washington, D. C. He says the family's visit to the St. Laurents in Maine last summer was a delightful experience and the hospitality was out of this world. He expects a visit from Helier Rodriguez, and we shipped him the 1921 Havana show on slides for presentation at that time. Bob's acknowledgment says his operation is a thing of the past and recovery has been complete. He adds: "Helen and the children and I had a showing of the Havana slides last night and really enjoyed them. They brought back many pleasant memories of that unforgettable reunion." Sidney Senzer of Mamaroneck, N. Y., wrote an interesting letter on his efforts to make the creative end of advertising and sales promotion a little more scientific and predictable as to results. Received just too late to reach print last summer, the note says he is off on a Euro-

pean trip. Sid's two sons also went to Tech, as noted in these columns. It's a long time since our days on *The Tech*, but in that period Sid has climbed to fame on the recent roster of "The 100 Top Copy Writers," in the book of that title.

The M.I.T. Club of Northern New Jersey, under the presidency of Sumner Hayward, opened its 24th year with a well-attended smoker in honor of the popular and esteemed speaker of the evening, Vannevar Bush '16, Chairman of the M.I.T. Corporation, Chairman of Merck and Company, and our revered senior instructor in Course VI. A grand time was had by all, listening to Van's excellent talk and off-the-record comments on science and the Soviets. Joe Wenick is the club's perennial treasurer, who doubles as a humorous speaker. Besides Sumner and Joe, the meeting was attended by George Chutter and your Secretary. G. Whittier Spaulding is another of the Class who is serving as president of an Alumni club. Whit heads the active M.I.T. Club of the Lehigh Valley, Bethlehem, Pa. He makes his home in Allentown, Pa. Thanks to Don Severance '38, Secretary-Treasurer of the Alumni Association, for his letter advising that Norborne L. Rawlings and Andrew I. McKee have been honored by M.I.T. in their selection by the Association as Alumni members of the Corporation Visiting Committee for the Department of Naval Architecture and Marine Engineering. Norborne has been renominated to the committee and Andy was newly nominated this year.

Ed Chilcott's electronic firm, Technical Products Company of Los Angeles, is signaled in the trade press for developing a novel wave analyzer system for use in design and environmental testing to analyze vibration, strain, pressure, and equipped with automatic tracking to make its other uses and applications limitless. Jack Healy made headlines in the Monsanto Chemical Company quarterly review, which announced his membership on the corporate planning group for appraising forecasts and consolidating long-range plans.

Dr. Daniel P. Barnard, IV, has retired from Standard Oil Company (Indiana) after 33 years in the research department, the last 10 as research co-ordinator. In 1954 and 1955, he served as deputy assistant secretary of defense in Washington, D. C.; and he plans to continue as a consultant to the Department of Defense. He joined Standard in 1925 as assistant director of research. He established the company's automotive engineering laboratory at Whiting, Ind., and the pattern of tailoring fuels and lubricants to fit engines for improved performance. He received the 1949 Horning Memorial Award of the Society of Automotive Engineers and served as the national president of the Society in 1952. He has also been president of the Co-ordinating Research Council and chairman of the automotive research committee of the American Petroleum Institute. His memberships include the American Chemical Society, American Society of Mechanical Engineers, Institute of the Aeronautical Sciences, Society of Automotive Engineers, American Petroleum Institute, National Aviation Club, National Pilots Association, Wings Club, OX-5 Club, and the Veteran Motor Car Club of America. He has published more than 50 papers and holds numerous patents. He and his wife, Eleanor, have two children: Daniel P.

Barnard, V, with the Standard Oil Company of Ohio; and Mrs. Fred S. Wood of Valparaiso, Ind. The Barnards are in their new home in Bozman, Md.

S. Paul Johnston of Princeton, N. J., has been appointed to the editorial advisory board of the *Encyclopedia Britannica*. The director of the Institute of the Aeronautical Sciences, he will review reference work in the field of aeronautics and approve material for publication. He was a member of the aeronautics committee of the research and development board, Department of Defense. He served as executive director of the President's Air Policy Commission of 1947 and as executive director of the President's Airport Commission of 1952. He was attached to the White House staff as a consultant on a special project in 1954. He was a consultant to the M.I.T. and Atomic Energy Commission Lexington Project in 1948. He is chairman of the Aeronautical Engineering Advisory Council of Princeton University and vice-chairman of the advisory board of the aeronautical education commission of the New York City board of education. For years, he has been a member of the Wright Brothers Trophy Committee, the Collier Trophy Committee, and the Daniel Guggenheim Medal Board of Award.

Paul was awarded the Legion of Merit for services with the Strategic Bombing Survey. He was elected a fellow of the Institute of the Aeronautical Sciences in 1946 and a fellow of the Royal Aeronautical Society of Great Britain in 1957. Following our graduation in 1921, he entered engineering work with the Aluminum Company of America. He joined the publishing staff of McGraw-Hill in 1930 and became the editor of *Aviation Magazine*. He was commissioned a lieutenant commander in the Naval Reserve and saw active duty from 1944 to 1946. The council of the Institute of the Aeronautical Sciences selected him as its executive officer in 1945, and he became director in 1946. He received the honorary degree of doctor of science from Adelphi College in 1957.

We apologize to Dugald C. Jackson, Jr., for the delayed acknowledgment of his two fine letters and the several packets of color and black-and-white pictures of our Havana reunion. They are excellent and have been seen by all who visit us in Glen Ridge as part of the full course in support of the beauty of Cuba and the red carpet treatment which the visitor receives there—especially from the M.I.T. Club of Cuba and our own Helier and Graciela Rodríguez. Dug says that he and Betty stopped in Mt. Dora, Fla., on their return from Havana to see their daughter's three children. They were unable to join us last Alumni Day in Cambridge because of a trip to Berkeley, Calif., to attend the annual meeting of the American Society for Engineering Education. Dug concludes: "The Havana trip was truly an unforgettable occasion." We can all certify to that, and we will never be able to thank adequately all the friendly Cuban Alumni and their wives who saw to it that our reunion was such a memorable event. In order to maintain as complete a record as possible, your Secretary will be happy to receive your slides, pictures, and movie film of Havana to add to Bob Miller's extensive photographic record of the Class. We plan to show all of these pictures at our BIG 40th reunion, so please send them now while it's fresh in your mind.

Another phone call from Ray during the preparation of these notes tells of the participation of many more of the Class in the solicitation of special gifts to the Amity Fund as well as for our 40th reunion gift. Here in New Jersey, George Chutter will be accompanied by Sumner Hayward, Munnie Hawes, and Joe Wenick to a special meeting tomorrow night with M.I.T. officials. Bill Loesch in Cleveland; Jack Barriger in Pittsburgh; Miles Zoller and Wally Adams in Cincinnati; Dick Windisch and Bill Kennedy in New York City; Ted Steffian, Mel Jenney, and Chick Kurth in the Cambridge area—these are only a few of the many who are giving their time and efforts right now in behalf of M.I.T. and 1921. The fine letter you received in October from Ed Farrand deserves your reply and return of the card he enclosed. Find the letter and do it now!

Antonio H. Rodríguez has reported on his trip to Europe this past summer in a long letter which says, in part: "We had good weather, cool and dry, which encouraged our walking until our feet could not bear it further. The technical museums are splendid, to say nothing of the art and natural history ones. It is amazing to think of the recovery power of the nations destroyed by the war. They continue the reconstruction of their cities so that there is no trace of their past misfortunes." Dr. Flemmon P. Hall gives his address with the Electronics Division of the Onondaga Pottery Company as 1858 West Fayette Street, Syracuse 1, N. Y. Robert S. Cook reports he has journeyed from his summer residence in Canandaigua, N. Y., to his winter abode at 633 Royal Plaza, Fort Lauderdale, Fla.

What's your news? A note to either of your Secretaries will make their holiday happiness complete. The season's greetings and all good wishes for a merry Christmas and a happy new year to you and yours.—CAROLE A. CLARKE, *Secretary*, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, *Assistant Secretary*, Edwin T. Steffian, Architect, 11 Beacon Street, Boston 8, Mass.

1922

The September Alumni Fund Conference was exceptionally successful with many credits being given to the constructive plan of our Class for its 40th reunion. Parke Appel conducted a short business meeting attended by Yardley Chittick, Don Carpenter, Fred Dillon, and others to review the excellent progress made to date. The activity produced in other classes will greatly increase the resources of the Institute. Demonstrations included stellerators and a vehicle for traveling to and obtaining photographs of Mars. Your Secretary again thanks Clate Grover for the Whitehead Metal magnetic key holder. Author Sidney E. Whitman was photographed in the *Worcester Telegram* as a "boots and saddles expert."

Edward A. Merrill has shared with the architectural firm of Skidmore, Owings, and Merrill in receiving the 1958 Harleston Parker medal awarded by the Boston Society of Architects for excellence in design and construction of the Karl T. Compton Laboratories. Lloyd E. Raymond has been named senior processing engineer on the staff of Robert W. Stewart, Vice-president of the Singer Manufacturing Com-

pany. Mr. Raymond was formerly manager of the Hardening and Japanning Departments at their Bridgeport factory. He is chairman of the Connecticut section of the American Institute of Mining and Metallurgical Engineers and chairman of the New Haven section of American Society for Metals.

Our northwestern representative H. W. McCurdy of the Puget Sound Bridge and Dredge Company has received an honor certificate for his firm from Pepperdine College at the sixth annual America's Builders Recognition Night. Barrett G. Hinds of the San Francisco Bridge Company accepted the honor certificate for his firm from Dr. M. Norvel Young, President of Pepperdine College. The admission of each into the "Hall of America's Builders gives full privileges as a welcome guest on the College Campus forever." A most complimentary item from Baltimore announces the promotion of Bartow Van Ness, Jr., to the position of chief electrical engineer of the Pennsylvania Power and Light Company. He received his master's degree with our Class. William L. Hyland of Fay, Spofford, and Thorndike, Inc., discussed "New Frontiers in Civil Engineering" at the fall meeting of the New England Section, American Society for Engineering Education, at Harvard University in October. Norman P. Randlett of Laconia, N. H., is now president of the M.I.T. Club of New Hampshire. H. E. Lobdell '17 attended the election meeting and brought official greetings.

We received the following new addresses: Broderick Haskell, International Finance Co., 1818 H Street Northwest, Washington 25, D. C.; Colonel Ross B. Warren, The Incarnate Word Academy, 2930 South Alameda, Corpus Christi, Texas; Leo Freeman, 2530 Terrace Avenue, Baton Rouge 6, La.

A particularly pleasing memo from George Dandrow accompanies full-page spreads of Johns-Manville advertising in various magazines. They are not edible but look good enough to be.

Another request: please send to your Secretary news about yourself and other classmates—we need news.—WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

1923

Before you receive this issue of The Technology Review you will have received the post-report on the 35th reunion of our Class. I trust that you enjoyed reading about and seeing what went on in Cotuit last June.

Mr. William Webster has been nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for Sponsored Research.

Mr. Robert Sprague, Chairman of the Board of the Sprague Electric Co., North Adams, was active in the 12th New England Quality Control Conference held in Pittsfield, Mass., on October 29 to 31. He was also conference cochairman for the 43d annual meeting of the Associated Industries of Massachusetts, which was held in Boston on October 23.

Mr. William S. Wise, Director of the Connecticut Water Resources Commission, was appointed to the Water Pollution Control Advisory Board by President Eisenhower. He will act as chief adviser to the Surgeon General of the U. S. Public Health Service in carrying out the federal water pollution control program.

Mr. Walter E. Richards, Colonel, U. S. Air Force (retired), has been re-elected as first vice-commander of the San Francisco Squadron of the Air Force Association. Mr. Richards has been very active in this Association for several years. Mr. Edward McSweeney, a New York executive, had an article published in a recent issue of *The Technology Review*. It was entitled "Business and Education: Mutual Survival."

Since the last class notes we are very sorry to report the death of the following members of our Class: Mr. Harry Paletz of Gary, Ind., who died on July 3, 1958; Attorney Harry Perlstein, who died in Vineyard Haven, Mass., on August 8, 1958. Attorney Perlstein was a public administrator of Dukes County and a leader in community affairs. He had been a practicing attorney in Vineyard Haven since 1931.

Keep your Secretary or Assistant Secretary informed of interesting news about yourself.—HERBERT L. HAYDEN, *Secretary*, E. I. du Pont de Nemours and Company, Leominster, Mass. ALBERT S. REDWAY, *Assistant Secretary*, 47 Deepwood Drive, Hamden 17, Conn.

1924

Our 35th is one month nearer than it was in the last issue. By this time you will have had the basic facts from Chairman Cardinal: just to repeat, Oyster Harbors Club, Osterville, Mass. (that's on Cape Cod), Friday, June 12, to Sunday, June 14, 1959. And the next day, Monday, is Alumni Day at M.I.T. So make your plans now. Best guess at the moment is that 125 of us—classmates, wives, and a smattering of progeny—will be there. So plan for it now; and if you haven't yet replied to the committee's query, do so. A note to your Secretary will do it. We don't want anyone to have to sleep on the beach, and that's what might happen to last-minuteers.

And don't forget the warm-up in Old Mexico. It's Nish's Fiesta in March. Maybe you've heard from him by now. Enough of you have said you'll be there "sometime" so that, if you make this the year, '24 will own Mexico City. For three days, anyhow. It's March 12 to 14; and if you are interested and don't get the dope soon, again let your Secretary know. Take it from one who's been there, *this* one is fun! So much for reunions. Now to see what you have been doing lately.

Of course every third clipping that comes in is about Jimmy Doolittle in his many and varied jobs. He wrote the foreword for a book by Harold Gatty, old-time flyer. He spoke at the dedication of the Fairchild F-27 propjet air liner. He was appointed to the Civilian Space Agency Council by President Eisenhower. And so on. General Doolittle is not only exceedingly capable. He is indefatigable.

The M.I.T. Corporation's Visiting Committees are of great importance in guiding the paths of the various departments. This year the Alumni Association has nominated

three '24 men for these committees. (Never heard of a nominee being turned down.) They are: Hood Worthington and Clarke Williams for Nuclear Engineering; Luis Ferré for the Library. In the case of Luis, it's a renomination. In the case of the other two, it's not only a new nomination, it's a new department!

In October the National Electronics Conference was held. Among the speakers: Professor Robert P. Siskind of Purdue, who discussed "A VHF-UHF Band-Pass Filter Employing Striplines and Capacitors as Circuit Elements." Your Secretary, who never got beyond 6.01, is completely at sea. At least he finds this title more understandable—Professor Thomas K. Sherwood (M.I.T.) has coauthored a book, *The Properties of Gases and Liquids*. And in still another field, Austin G. Cooley presented a paper in September on "Trends in Facsimile Transmission of Meteorological Data." Weather maps will get around much faster than heretofore.

Cy Duevel made a California trip in late September. In a note before he left, he said: "Will try to get in touch with Bill MacCallum while I am out there, but he is a hard man to find as he travels as much as I do." The betting is he didn't connect. At about that time Bill and Eleanore stopped by the office with their daughter, Alexandra, who was just back from a summer in Europe. She—Alexandra, that is—graduates from Pomona next June, the same week end as our reunion. However, she has decided reunions should be more fun than getting diplomas, so the whole family will be with us on the Cape in June.

Prize story of the month, however, concerns an invention of your classmate Joseph B. Glancy, who has invented a nest for oysters! Joe Glancy runs an underwater farm in Long Island's Great South Bay called Shellfish, Inc. A legitimate Blue Point must spend at least three months in Great South Bay. His biggest problems are snails and starfish which kill the young oyster. So Joe puts his youngsters in a wire bag suspended off the bottom on a short column with a poison cup below. After three months of pampering, they are big enough to take care of themselves and then get dumped out into beds. Joe says the yield should be five times greater than now; so if you see the price of a plate of Blue Points dropping, you can thank Joe Glancy.

It's time to wish you all a very Merry Christmas, and may the new year bring you only the best. Be back with you then.—HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

The deaths of two members of the Class have been reported during the past month. E. Barnes Hopkins of Melrose, Mass., died on August 18, 1958; and John H. Rountree, Jr., passed away July 25, 1958. There is no other information available as yet concerning either of these classmates. John Rountree was employed by the Linde Air Products Company in Newark, N. J., at the time of his death.

Word has come in that James F. Cunneiff, who was located at Corpus Christi, Texas, is now located in Tucson, Ariz., and has been promoted from captain to rear admiral.

Through the kindness of Wade Johnson, Your Secretary recently received a very fine newspaper story on Jim Holland. The title of the story is: "His Hallmark: Precision in All Things." Jim has been working for the B. F. Goodrich Company for nearly 25 years and is a manager of the Store Design Engineering Department. This particular newspaper report not only mentions the fine job that Jim has been doing with Goodrich, but pays tribute to the many civic activities with which he has been closely connected for a number of years.

An interesting article in the *Fall River* (Mass.) *Herald News* noted the fact that Robert S. Stansfield, Jr., Course XV, was speaking at the Third Baptist Church at services in August. Bob went on to the Gordon Divinity School after graduating at M.I.T. He is a major and former chaplain of the U. S. Army, having served in the European Theatre in the Second World War. His home was originally in the Fall River, Mass., area; and he is well known there as well as across the country, where he frequently speaks on the topic "Science and Christianity."

Your Secretary should have mentioned the very pleasant evening he spent with Ben Oxnard and Mrs. Oxnard at Ben's home in Denver, Colo., last June, following attendance at a conference on research administration conducted by the Denver Research Institute of Denver University. Your Secretary was received most hospitably at the Oxnard household, where he enjoyed a delightful dinner and a much too short evening talking about the M.I.T. of 1925 and the greater M.I.T. of today, and speaking of many of the Alumni with whom we have been in contact over the years.—F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

Greetings from the crow's nest at Pigeon Cove. This Sunday morning in mid-October it seemed like a good idea to come up here to put the class notes together. It's a tiny little pine-paneled room at the end of the balcony with bookcases recessed in the wall, a couple of ship models, and shelves with all the M.I.T. Alumni Day steins. There is only one window, a diamond-paned casement, but the view through it is priceless. As I sit here in the process of getting down to business on the class notes I look down upon Pigeon Cove harbor with its two dozen or more lobster boats and the little fishing shacks nestled in back of the granite breakwater which was constructed 75 years ago when this was an important center for stone quarrying. There is a strong but gusty north wind this morning, and the fishing boats are "sailing" at their moorings. With the early morning sun coming in low and reflecting from their transoms, it makes quite a sight.

But if I'm to get on with the class notes I had better quit day dreaming and get down to business. Here's a post card from Earle Lissner, postmarked Rome. Let's see what he has to say: "Dear Secretary: It is said that one does not need a word of the language to get by. Two weeks in a pension. The maid has learned to say 'by-by.' What sign language does one use when the rented Fiat's lights fail in the mountains half way between Naples and Rome?" Sounds as though Earle

and his wife had a most unusual trip, and we are looking forward to hearing more about it. Whit Ashbridge has given an account of himself in a recent letter: "Dear George: Several months ago when I wrote you that I was leaving South America and looking for a place to settle down, you hinted that I might be retiring. It didn't turn out that way. I have accepted an appointment with the Veterans Administration to be in charge of their construction, starting September 2. So we've bought a house in Washington and will be living at 3 Magnolia Parkway, Chevy Chase, Md., as soon as the painters and plasterers finish, which should be in the latter part of September. If you or any other '26 classmates get down that way, be sure to look us up. My office will be in the Munitions Building, 21st and Constitution Avenue. Sincerely, Whitney Ashbridge."

Leon Zaitzevsky has mailed us a clipping with a Centerville, Md. dateline of September 19 telling of the death of Frank Trevor Hogg, who Leon states was a classmate in the Architectural School. In our days at the Institute when the Architectural School was located in Boston, we did not become acquainted with all of the architects; so we should be kept informed by those architects we do know, like Leon. The clipping states that Frank Hogg was 64 and that he attended Princeton before M.I.T. and was captain of the Princeton football team of 1915. A news release from the Humble Oil and Refining Company of Baytown, Texas, tells of the retirement of Joe Casey after more than 30 years of service at Baytown. Joe was assistant superintendent of the two synthetic rubber plants at Humble's Baytown refinery.

As you may well expect, I keep sneaking a look out of the window at the boats down in the harbor; and I have a double reason for doing so. My handy man, Gunner, has a beat-up old dory with an outboard in which he goes lobstering. He only has about 30 lobster pots (in contrast to 150 for the regular lobstermen), so he usually gets in early. Since I want him to help me cement up the sea wall before freezing weather sets in, I must catch him the minute he comes into the harbor. So before I run off and leave you, let's add a couple more news items to the class notes.

Here's one about an architect classmate whom most of us know because he always shows up at reunions. We quote from the *New York World-Telegram and Sun*: "New honors have come to Michael L. Radoslovich, director of architecture for the New York City school system. Mr. Radoslovich received the 1958 medal of the Municipal Art Society for outstanding service in enhancing New York City's school buildings with murals and sculpture. Two years ago, P.S. 48, Rich., a Radoslovich-designed building, won a silver medal at the Architectural League Show. Mr. Radoslovich, a graduate of the Massachusetts Institute of Technology, joined the city school system Bureau of Construction as chief architect in 1952. He was appointed director of Architecture last year." Congratulations, Mike! The architects really seem to be taking over the class notes this month, but they also seem to deserve it.

I have a note from Don Severance, Secretary of the Alumni Association, telling of the nomination of Sam Homsey by the Alumni Association for the position of Alumni member of the M.I.T. Corporation Visiting Com-

mittee for the Department of Architecture. The Corporation's Visiting Committees are usually composed of nine members: three members of the M.I.T. Corporation, three non-M.I.T. members chosen by the President; and three M.I.T. Alumni members recommended by the Alumni Association. Ordinarily the committees meet once a year. The purpose of the committee is to give the department the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration.

Since the architects have made such a good showing, let's leave the month in their good hands and get along with the repairs to the sea wall. Gunner has just come into the harbor. One other important message, however, because I note that even though it is mid-October I am writing for the December issue. The important message, of course, is merry Christmas to all!—GEORGE WARREN SMITH, *General Secretary*, c/o E.I. du Pont de Nemours and Company, Inc., 140 Federal Street, Boston, Mass.

1927

Edward D. Stone has been nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee. He has also been appointed as a member of the National Institute of Arts and Letters. Jim Lyles has been renominated to the M.I.T. Visiting Committee for Economics and Social Sciences.

The deep-sea movie camera constructed by Dr. Harold Egerton and referred to in our Class Notes of July is currently en route to the Mediterranean for a christening.

Dr. Henry G. Houghton was the principal speaker at a recent meeting in New York of the American Meteorological Society and the New York Board of Trade. Subject: weather.

Ed H. Wells of Darien, Conn., who has been with Johns-Manville as far back as our records go, has been appointed assistant general manager of the Johns-Manville Packings and Friction Materials Division.

The American Institute of Electrical Engineers has elevated six of its members to the grade of fellow, its highest grade, awarded to members who have served with distinction in the electrical engineering profession. The following is a citation to Howard A. Chinn: "Chief engineer, Columbia Broadcasting System Television, New York, for his contributions to the development of measuring and monitoring equipment in the audio and video broadcasting field."

Louis F. Eaton, who was a graduate student in Electrical Engineering in our Class, has retired from the position of president of the Brockton Edison Co. His future plans have not been announced, but judging by his very busy career in business and community affairs, plus six married children and fourteen grandchildren, we would suggest relaxation for a while.—J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

1928

Jim Donovan, reporting on reunion finances, ended up with a small surplus of cash. This came about because several firms assumed part of the expenses that had been allowed for. As a result of this Jim was able to make a refund of the registration fee for

children who attended the reunion. This seemed only fair because children really didn't add anything to overhead. The remaining balance of the surplus, amounting to \$260, was applied to the class gift to M.I.T.

Many who came to the reunion brought their travel slides but did not get the chance to show them. The committee is very sorry that time proved to be so limited—the slides that were shown were excellent, and there is no doubt we would have enjoyed the others. Now we can only hope that there will be another opportunity to see them.

Dick Hoak appeared for mention in the July 28 edition of *Chemical Engineering*. This was in connection with Dick's process for disposal of waste sulfuric acid pickle liquor. Dick is a senior fellow at Mellon Research Institute. The process is patented and its commercialization is under consideration by Crucible Steel Company and Rust Engineering Company.

Herm Swartz, who has served so well as our class agent, now has turned this post over to Charlie Worthen. Speaking for the Class, we thank Herm for his excellent handling of a difficult job and give our assurance that we all appreciate his generous effort. Charlie, as the new class agent, and Jim Donovan as special gifts chairman are planning to lead a determined effort toward increasing this year's contributions from '28. The amount of our support is highly important to the Institute—please do everything possible to back up our Class's participation. If you have not made your contribution, please do so; try to do more than last year; and finally, pass the word along to others in the Class. Let's prove we are sincere when we say how much we owe to M.I.T.!—GEORGE I. CHATFIELD, *Secretary*, 100 East 42d Street, New York 17, N. Y.; WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1929

As I pointed out last month, before you will have read these notes you will have received (or should have if your address is right in the Alumni files) the first mailing with questionnaire regarding the 30th reunion.

Plans are still being finalized on the activities for the 30th, but by and large it will be a "do as you please" week end. You will note a correction from a previous announcement in The Review that the week end starts Friday, the 12th, and runs through to Monday morning, the 15th. My last writing indicated Saturday and Sunday only.

There is not much real news which has come in since last month's notes, but I do have some replies from a sampling on reunion attendance.

Dave Peene writes: "Barring accidents, I plan to attend the 30th reunion with my wife, Mary Lou. Will be looking forward to seeing everyone." A wire from George Cudhea: "Will be there with wife and golf clubs. Regret late reply as have just returned from three weeks on West Coast." And from Bill Aldrich: "Sure glad to get the dates and place. Promised my kids that we would take a long trip next year. They are planning on it every day and I am past the stage of turning back. Wonderful place, looking forward to it whether the Missis comes or not."

Gordon Bowie writes: "It was very pleasant to receive the description of the program being planned. It sounds most interesting, and at present I am planning to attend. I am back in the Engineering Department of the New York Telephone Company and am associated with the program for the development of new operating procedures. We live just outside of Albany and enjoy its central location between the East Coast and the Adirondack and Catskill Mountains, which provide plenty of recreational attractions." A note from Jerry Palmer: "Unfortunately, I have a son graduating from Princeton at this time and another son graduating concurrent with that from high school. With this situation it's just going to be impossible for me to make the 30th reunion. However, I would like you to pass the word along to various classmates that I am sorry I am not going to be able to be with them." Bill Bearce has the same problem with a son graduating from Bowdoin.

From John Rich: "I think Olive and I will be able to make the June 13 and 14 dates at the Bald Peak Colony Club in Melvin Village for our 30th reunion in 1959. I stopped in to see Wally Gale at Bald Peak in August after we had returned from a family vacation trip, and the Bald Peak Club is certainly a grand place to hold a reunion." Adam Stricker writes: "It is, of course, quite a long way ahead to know just what will be happening next June; but God willing and the schedule permitting, my wife and I will certainly be there." From Thomas Speller: "My wife and I will definitely be at the reunion in June, so please include our names on the list." And from George Meyers: "By all means count Mrs. Meyers and me in for the 30th reunion. My oldest son is now a junior at M.I.T., working out his Electrical Co-operative Course at Philco. The next younger is a senior at Mount Hermon School, and the two youngest are at high school here at home. Beginning about the time of the 25th, the family became a camping family. Since then, we have taken trips a la tent to the Canadian Rockies and to Nova Scotia."

Mac Hubbard writes: "I will certainly plan to attend the 30th reunion and am delighted to find it is to be at Lake Winnepesaukee. I think the choice for 1959 sounds excellent. In regard to how many will attend, I am sure my wife will come. My children are not so mobile now—possibly I could bring a granddaughter (I have two)." Bion Francis writes that both he and his wife will be present, as does Earl Abbe. Ed Murphy plans to be there, and Warren Walker writes: "Elise and I would be very happy to attend the 30th reunion at Bald Peak Colony Club, Melvin Village, N. H., on June 13 and 14, 1959." Carl Harris plans to attend, although it is too early to be sure. Dev Martin writes as follows: "It looks unlikely that the Dev Martins will be able to attend the 30th, as much as we would wish to do it. We are in the throes of moving to California, and in all probability will not be able to make such a long trip at that time. Please keep us advised, however, and we'll do it if we can. I'll keep the Alumni Association informed of my address as soon as available." Clarke Walling and his wife plan to attend.

If, by this time, you have not returned the card to us indicating your attendance (or non-attendance), please do so. Again, any material for The Review will be appreciated.

—FISHER HILLS, *Assistant Secretary*, 62 Whittemore Avenue, Cambridge 40, Mass.

1930

With this issue go our wishes for a very happy holiday season.

And now to bring you up to date on bits of news we have picked up since last July. The Class of 1930 was represented at Alumni Day on June 16, 1958, by the following: Leslie and Mrs. Berman, William and Mrs. Buracker, Richard Ellis, Joseph Harrington, Merritt Hulett, Allen and Mrs. Latham, Morell and Mrs. Marean, Anthony and Mrs. Savina, Myron and Mrs. Smith, Joseph Miller, Robert and Mrs. Jacobs.

Through the *Natick* (Mass.) *Bulletin* we have learned that Ed Baldwin was appointed individual gifts chairman for the 1959 United Fund in Natick. Ed is a member of the Natick planning board and is trustee and treasurer of the Bacon Free Library in South Natick. He has been active in Red Feather campaigns for over 30 years, one of the many organizations now benefiting from the United Fund. He and his family reside on Woodland Street in South Natick, Mass.

A news item in the *Portland* (Maine) *Express* brought to light the appointment of Bill Cullinan as the first head of the Civil Aeronautics Administration's Tri-State Airports Division in Portland. As district airport engineer Bill will have charge of planning and construction of Federal Air airports in Maine, New Hampshire, and Vermont. He is a former district manager and engineer for the Portland Works Progress Administration.

Fred Dickerman and his son (whom Fred hopes is a prospective student here) visited the Institute on August 11, and it was good to see them. Recently Fred was made assistant chief engineer of Lockheed, Atlanta Division. He is president of the M.I.T. Club of Atlanta.

We proudly report that Joe Harrington's oldest daughter, Joan, graduated *magna cum laude* in History from Smith College last June. She was married August 30 in her parent's home to Roger G. Smith, who is a graduate of Brown and is now completing premedical training. Joan and Roger are living on Beacon Hill in Boston, and she is working at the Massachusetts General Hospital. Our congratulations and best wishes to the young couple.

We recently came across an article in the *Salem* (Mass.) *News* about Greg Smith. Greg, as you know, is president and general manager of the Eastman Gelatin Corporation in Peabody, Mass. The article stated that he is active in United Community work, having served on the executive committee. He is also a director of the Marblehead Red Cross, the Marblehead Y.M.C.A. and the Marblehead Historical Society; a member of the council of the Essex Institute, a director of the Salzburg Seminar in American Studies, and a vice-president of the World Affairs Council.

Sol Uman sent us a note stating that he was proud to say that his younger son, Stephen, entered M.I.T. this fall, and expects to become a petroleum engineer. His older son, Henry, graduated from M.I.T. in 1957 and, after having served as second lieutenant in the Engineering Corps at Fort Belvoir, is now associated with Sol in their construction firm. Sol says they are doing their share of building up Nassau and Suffolk Counties

on Long Island from factories to schools. He recently heard from Don Dimanni, who has moved to San Francisco, Calif.

The following classmates have been nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee: Al Waidehlich for the Department of Civil Engineering; Ralph Rowzee for the Department of Chemistry; Al Latham for the Department of Humanities.

Our 30th reunion is now only 18 months away! Remember, this memorable occasion will be held at Oyster Harbors on Cape Cod June 10 to 12, 1960. Do keep these important dates in mind.

I know you will be saddened to learn of the death of Bryant Kenney on July 14, 1958, after an illness of several months. Bryant was a director of Standard-Vacuum Oil Company. He was a petroleum refining executive of broad international experience, responsible for Standard-Vacuum's overseas refineries. He joined Standard-Vacuum in 1951 and during that year went to Durban, South Africa, where he directed the construction and later the operation of the first oil refinery in that country. Returning to New York in 1954, he was elected a director of Standard-Vacuum Oil Company. We all remember the fine talk he gave at our Class banquet in 1955 (on the occasion of our 25th reunion) about his business experiences and adventures in his travels through the Far East.

We have quite a large number of changes in address to report. They are as follows: Robert S. Cook, Apartment 202, 1540 Fifth Avenue, San Francisco 22, Calif.; Harry J. Fekas, 404 Deep Creek Road, Warwick, Va.; Charles B. Gale, 68 Cedar Lane, Bronxville, N. Y.; Garret E. Green, Apartment 2B, 158 South Harrison Street, East Orange, N. J.; Hayward K. Mann, 922 Enchanted Way, Pacific Palisades, Calif.; Lieutenant Colonel John A. Mathews, 9319 Weaver Street, Silver Spring, Md.; James A. Merrill, 2881 Walnut Ridge, Akron 13, Ohio; Lieutenant Colonel Alvah E. Perkins, J.U.S.M.G. Spain, A.P.O. 285, New York, N. Y.; Charles R. Prichard, Jr., Gas Service, Inc., P.O. Box 520, Nashua, N. H.; Hermon H. Scott, 111 Powder Mill Road Maynard, Mass.; Professor Joseph M. Shelley, University of Minnesota, School of Architecture, Minneapolis, Minn.; Hazen Sise, Room 410, Dominion Square Building, Montreal 2, P. Q., Canada; Dr. Andrew M. Tiernan, 110 Maycox Avenue, Norfolk 5, Va.; Joseph C. Twinem, 2167 South Fillmore Street, Denver 10, Colo.; Gregory A. Vincent, 242 Fawn Drive, San Anselmo, Calif.; Colonel Elsmere J. Walters, Box 1332, Carmel, Calif.; Paul I. Wang, 540 Muskingum Avenue, Pacific Palisades, Calif.; Mrs. Helen R. Wren, 3 Twelfth Avenue, San Francisco 18, Calif.;—GEORGE P. WADSWORTH, *Secretary*, Room 2-285, M.I.T., Cambridge 39, Mass. RALPH W. PETERS, *Assistant Secretary*, 249 Hollywood Avenue, Rochester 18, N. Y.

1932

I enjoy getting post cards from our classmates visiting Europe. John Brown, X, sent me a card from Brussels and Rolf Morral, XIV, sent me one on his way to Barcelona to see Juan Serralach. The more we hear about the treatment that our classmates and our old pal Dean Lobdell have received in

Barcelona, the more convinced I am that we should have our 30th reunion there as Juan has requested.

A long letter from J. Stillman Haynes, III, explains some of his activities as chairman of the industrial and planning commission of the village of Depue, Ill. Stillman has quite a task on his hands because the village has lost an acid plant and a pigment plant and they are looking for new industries, particularly in the metal, pigment, and chemical fields. Many of the problems we have run into in other areas of the country in connection with our consulting activities seem to be answered in Depue, since the area is accustomed to heavy industry and has admirable transportation by highway, rail and the Illinois Waterway. Water is plentiful even in drought periods, and waste disposal is no particular problem. As Stillman put it: "We like to think we have the chemical industry's prize formula for plant location—H₂O." Stillman is serving or has served on the school board, Red Cross, and local recreational clubs. He has one daughter and two boys attending school in Depue. Anybody need an ideal plant site halfway between Chicago and St. Louis?

Dr. Oscar T. Marzke, IIIG, is again in the news. He has been appointed a director of The Metallurgical Society of American Institute of Mining, Metallurgical, and Petroleum Engineers. He is also making the keynote address at the 25th anniversary of the founding of Wayne State University in Detroit. Another vice-president, Stu Fleming, XVII, of Ford, Bacon, and Davis, reports that he has just returned to the home office in New York after two and a half years in British Columbia designing and constructing natural gas facilities. His older daughter has started her second year at Bucknell University, in Civil Engineering, of all things.

Frank S. Chaplin, XVI, has resigned his position with the Franklin Laboratories in Philadelphia where he was associate director in charge of Mechanical Engineering Division for the past nine years. Among other things, he was responsible for the development of the 280 millimeter atomic cannon for the Army Ballistic Missile Agency. Frank has opened an office for the practice of consulting engineering in Plymouth township, Pa. We wish you the best of luck, Frank, in this new endeavor and hope that this will afford a better living for your two boys and two girls, as well as many exciting problems in the field of mechanical engineering.

Eugene P. Worthen, XIII, has been honored for his exceptional services during the 25 years of employment with the Bethlehem Shipbuilding Corporation. He is chief designing marine engineer in the Central Technical Department of the Fore River Shipyard.

Donald A. Rice has been awarded the Colbert Medal of The Society of American Military Engineers. This medal is offered as an annual award to a member of the United States Coast and Geodetic Survey in recognition of the most outstanding contribution to military engineering. Donald has been chief of the Astronomy and Gravity Branch in the Geodesy Division for the past 10 years.

John B. Calkin, X, partner in Calkin and Bayley, is chairman of the Paper Products Division of the three million dollar campaign of the American Chemical Society for a new headquarters building in Washington. They have already reached half their goal as of this writing. We should use John on some

of our own fund raising campaigns for the Class of 1932. Incidentally, Zeke Boling, I, is chairman of our special gifts program. He will undoubtedly be contacting many of us within the near future about further gifts to M.I.T. Let me assure you that these are needed.

Kenneth B. Thompson, XVI, writes from Box 643 in Gabbs, Nev., that he and his wife have been out on the Nevada desert for the past seven years in connection with his position as chief chemist for Basic, Inc. Far from the desert we find that Earle F. Hiscock, XIII-C, of North Chatham on Cape Cod, is running for the school board. He is engaged in consulting engineering and patent work in Chatham. That sounds like a wonderful place to live.

Harry L. More, XV, writes that monthly Class luncheons are scheduled for the third Tuesday of each month at the M.I.T. Club of New York in the Hotel Biltmore. This sounds like a wonderful idea and may well be an active nucleus for our 30th reunion. Harry was very effective in organizing many of the New York Alumni for our 25th.

Alva T. Wilson, V, writes that his daughter has entered the University of Massachusetts. For the past five years he has been manager of development at National Fireworks Ordnance Corporation in West Hanover, Mass. This is now a subsidiary of the American Potash and Chemical Corporation of Los Angeles. Bob Strong, XV, has a son, Robert Jr., entering M.I.T. this fall in Course XV. Juan Serralach reports that his daughter has married a U. S. citizen and is now living in Cali, Colombia. Any more of you have news about your children?

Bernardo P. Abrera, XIII, is general manager of the National Shipyard and Steel Corporation in the Philippines. He was in New York at the United Nations endeavoring to secure a loan from the Export-Import Bank to expand the steel industry from its present capacity of 30,000 tons per year to 300,000 tons by 1961. Another one of our classmates who have done extremely well in the foreign field is Rene G. Hochreutiner, VI. Since 1954 he has been president of the committee of electrical energy of the Economic Commission for Europe of the United Nations. At the end of 1957 he was elected vice-president of the operating group of all power companies of western Europe, U.C.P.T.E. Sounds like a terrific job. Congratulations from all of us!—ROLF ELIASSEN, Secretary, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

May your holidays be pleasant ones. With this hope go warm personal wishes for a most satisfying new year from all your class officers. With our 25th reunion a pleasant memory and at the ripe young age of 40 plus, we all recognize that many of life's satisfactions don't have the dollar sign attached.

As we round the corner into 1959, we present the Class man of the year, Lou Flanders. As class agent he is truly the unsung hero of '33. This low pressure fund raising, which the Alumni Fund is, takes an awful lot of after-hours' work; and Lou does his stint without a murmur. In fact, he seldom wears anything but a smile on his face. Let's keep him smiling!

Congratulations on promotions: to George Wrigley, Jr., I, who became president of J. E. Sirrine Company in Greenville, S. C., last

fall; to Walter J. Haring, IV-A, who has become director of maintenance for Tishman Realty in New York City; to John C. King, Jr., I, who is now manager of sales for the Intrusion-Prepakt, Inc., in Cleveland (John is past president of the American Society of Civil Engineers in that city); to Horace K. MacKechnie, VI, who is now an engineering specialist with Sylvania in Buffalo, after serving as technical director of the Lowell Technological Institute Research Foundation; and to Captain Charles R. Watts, XIII-A, who retired from the Navy and is now an executive engineer with the Electrometallurgical Company in Niagara Falls. (He reports with modest pride that his older son graduated from the Naval Academy in 1951 and is now a lieutenant; he has a younger son, 15.)

We regret to report the death of William T. Hanley, IX-A, last March 3. Bill was with the Bureau of Ships in Washington. Sorry we don't have any further information on Bill. Several of our classmates are in key positions in M.I.T. affairs: Ingvald E. Madsen, I, is president of the M.I.T. Club of Western Pennsylvania (with headquarters in Pittsburgh); Robert E. Smith, X, is guiding the destinies of the M.I.T. Club of Rochester, N. Y., this year; Donald G. Fink, VI, sometimes director of research for Philco, serves on the Visiting Committee for the Electrical Engineering Department at Tech (Don turns up at head tables most anywhere in the U. S. as president of the Institute of Radio Engineers, and makes some excellent speeches). Serving also as Visiting Committee members this year are: Robert Heggie, V, for Food Technology (Bob is vice-president at American Chicle, and this produces a very practical cure for indigestion), and Athelstan F. Spilhaus, XVI, for the Earth Sciences (which include geology, geophysics, and meteorology). Athel turned up last fall as coauthor of a syndicated comic strip called "Our New Age," dealing factually with the wonders of science.

Classmates on the move: Colonel Michael Sampas, XVI, now at the Norfolk Naval Shipyard in Portsmouth, Va., coming all the way east from Santa Ana, Calif.; Walter F. Swanton, X, who had his tour with atomic energy and is now back with the Pfaudler Company and living in Avon, N. Y.; and Miss Elna I. Perkins, VII, who has moved from Indianapolis to Lewistown, Pa. And in the news: S. Quimby Duntley, VIII, who chaired a session last fall at the meeting of the Optical Society of America in Detroit. Quimby has been right in the middle of the satellite business with his work on photometry of the sky at high altitudes. Dr. (and this means M.D.) Lawrence C. Kingsland, X, took time out to receive a master's degree in Public Health last June.

We are indebted to Cal Mohr and Beau Whitton for many of the above items. It is wonderful to have some alert compatriots around the country. Beau sent us a note from Bob Mills, IV, dated last June 23, reporting that he had had a rough spring with a siege of hepatitis. We've had word, too, from our responsible class treasurer, George Stoll, who operated under doctor's orders much of the spring but is now emerging in very good condition. Cheers, and again, our very best for happy holidays and a rewarding new year to each of you.—R. M. KIMBALL, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

It is a pleasure to report to you by way of these class notes on the progress that is being made on your 25th reunion to be held here at M.I.T. next June 12 through 15. There was enthusiastic response from classmates who were asked to help out on the reunion committee; and the subcommittees, whose work must start a year ahead of reunion time, have been busy. This particularly includes Lou Frank on publicity, Charles Wright on the reunion book, and several of us here at Tech on early planning in general.

My wife and I were the fortunate guests of the Class of 1933 at their 25th reunion last June; and it was certainly an excellent way both to see how a reunion operates on and about the M.I.T. campus and to reassure us that our own reunion here next June should be an outstanding event. The 25 year reunions of the M.I.T. classes are becoming increasingly important to the Alumni; and the Institute is recognizing this by helping in many ways to make the reunions successful, even to the point of financial assistance. We have always had good reunions, and I expect that our 25th next June will top them all.

If you have not yet returned your questionnaire with information for the reunion book, please do so now. We hope to print every classmate's name, whether we receive a questionnaire or not; so please help the book subcommittee by taking the 10 minutes necessary to fill out and return the questionnaire. We hope to have room for at least one picture of each classmate or family; but if you do not have a picture handy, send back the questionnaire anyway, and let the picture come later. Above all, mark the dates of the reunion on your calendar, June 12 through 15, 1959.

Dave Ingalls is president of Airtron, Inc., of Linden, N. J., a company that he was instrumental in organizing in 1946. They topped ten million dollars in sales last year. He writes in part as follows: "Among the 800 people we employ, we have three M.I.T. men on our staff: Robert S. Carr, one of my partners, Class of 1935; Robert Terry, Class of 1950; and Martin Goldstein, Class of 1957. In addition, the vice-president of the bank with whom we have been doing our financing is William Keith, M.I.T. Class of 1933. Speaking of capital, it is for this reason we have elected, as of August 1, to become a wholly owned subsidiary of Litton Industries, Inc., Beverly Hills, Calif.

"Litton is a fabulous organization made up of a group of companies some of which are dealing with space technology, inertial guidance, business machinery and calculators, electronic computers, radars. Many of these companies have been our customers and all of them will complement our activity. Before starting in my new capacity, I am taking a brief trip to Europe with my wife, including a week in Moscow, as a paid guest of Intourist, where I hope to see and learn some of the reasons we are all working at such a dynamic pace in our industry here in this country."

Notes from here and there: Graves H. Snyder, now a colonel in the Air Force, has recently returned from Europe where he was a base commander at the Burtonwood Royal Air Force Station to assume the duties of professor of air science, Air Force R.O.T.C., Newark College of Engineering.

Harry Fine was scheduled to participate with others in a discussion during the 1958 National Electronics Conference on October 13 through 15 on the subject of "The T.A.S.O. Television Field Strength Measurement and Analysis Program." Harry is with the Federal Communications Commission. Edward B. Locke, Jr., has been made president of the Technology Club of New Bedford, Mass.

M. M. Newman is president of his own firm, The Newman Corporation, in Marblehead, Mass. The Corporation works in the field of industrial electrical marketing. Samuel A. Groves, President of the United Car Fastener Corp., has been nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for the Department of Modern Languages.

The success of our Compton Scholarship Fund is being measured not just in dollars but in terms of M.I.T. students who are receiving support this year from this fund. Our friend T. P. Pitre, now director of Student Aid here at the Institute, tells us that the following four students are receiving support: Robert John Esterling, a junior in Physics from Glenside, Pa.; Joseph Edmund O'Connell, a junior in Business and Engineering Administration, from Whitehall, Mich.; Earl Austerberry Pike, Jr., a junior in Chemical Engineering from Millville, N. J.; and Richard Laurence Turner, a senior in Civil Engineering, from Manitoba, Canada. All of these students are in the upper bracket of scholastic achievement, are busy with extracurricular activities, and hold promise of being the kind of people worthy of our assistance.

The season's greetings to each of you, and remember the reunion dates, June 12 through 15, 1959.—MALCOLM S. STEVENS. Secretaries: WALTER MCKAY, Room 33-217, M.I.T.; MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass. JOHN A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, Cleveland 6, Ohio.

1935

Your class gift committee under the chairmanship of Dick del'Etoile has been working hard this past year and particularly this summer to set up an organization of area chairmen to put our \$100,000 class gift over the top. In June, Dick reported that to date we have approximately \$18,000 to our credit and a balance to be paid on pledges of \$17,000, a total of \$35,000. This is far short of the goal, as you can see. If you will read Hank King's class agent's letter of October 1, 1958, you will know that 228 men out of a class of 635 gave \$6,474.73 in 1958. To put the fund over this total is not a job for the committee alone, nor for the area chairmen, but for everyone in the Class. If every contributor in 1958 contacted one other classmate for 1958-59, we could more than double the annual amount of gifts; if two were contacted—or three.... Well, you see how it goes. Don't wait to get started, however, for we only have a year and a half to go.

G. Fred Lincoln, 24 Brunswick Drive, Warwick, R. I., sent me a magazine article about the plastic pipe industry featuring our Bill Abramowitz, Special Gifts Chairman. Bill, as you know, is president of Carlon Products of Cleveland and states that plas-

tic pipe sales are expected to jump from \$45 million in '45 to at least \$200 million in '66. W. Allen Taft, Jr., has been named director of sales of the Petroleum Chemicals Division of the Du Pont Co. Allen has been with Du Pont since his graduation. Bernard Friedman presented a paper at the Air Transportation Conference this summer at Buffalo, N. Y., entitled "On the Nonexistence of Finite-Stage Zeroing Procedures for Certain Systems with On-Off Controls."

Vincent P. Cook writes that he is a construction engineer for Research Cottrell, Inc., of Bound Brook, N. J. He makes his home at 428 Edgeworth Street, Middlesex, N. J., when he is not traveling. Now that his two daughters are in high school and college, his wife travels with him whenever possible. Carson L. Brooks is with the Metallurgical Laboratory of Reynolds Metals Co., 4th and Canal Streets, Richmond 9, Va. He is a member of the M.I.T. Club of Virginia. Elmer Roth was named Controller of the Whiting Machine Works. Formerly with Ernst and Ernst for 15 years, he is a member of the National Association of Cost Accountants and Society for the Advancement of Management. He lives in Westbrook, Mass., with his wife and five children. Dr. David N. Truscott is now living at 58 Oxford Road, Moseley, Birmingham 18, England, and is a member of the M.I.T. Club of Great Britain.

Lou Packard's Technology Instrument Corp. has seen his company's sales jump from \$3.4 to \$6.8 millions in the past five years; and with the acquisition of several subsidiaries, the company found it advisable to become a public corporation this summer. Some 260,000 shares have been offered for sale. The company now holds the #2 spot in the manufacture of precision potentiometers. William B. Fraser, G-2 Section, Headquarters, Sixth Army was recently transferred to San Francisco, Calif., from Phoenix, Ariz. Kenneth M. Warren is a member of the M.I.T. Club of Rhode Island and lives at 35 Franconia Drive, Cranston 10, R. I.

It is with regret that we note the passing of Garry Patitz of 74 Eaton Road, Needham, Mass. He was assistant to the vice-president in charge of operation services for Stop and Shop. He leaves his wife Carol and three children: Marsha, 16; Karen, 13; and Warren, 8.

Joseph Lempert published an article in the May, 1958, issue of the *Westinghouse Engineer* entitled "Electronic Imaging and Intensification." Joe has been with Westinghouse since 1936, earned an M.S. from Stevens Institute of Technology in 1942, and is now manager of advance development for the tube division. Alvin Sloane was elected secretary of the Faculty of M.I.T. for the year 1958-59. Bev Dudley sent me the following notes about the second Alumni Conference at the Institute in September. J. D. DuRoss, W. Godchaux, O. Hoag, H. F. King, C. F. Floe, and B. Dudley were there. Dud tells me Oliver Hoag is with Sperry Gyroscope in Greatneck, L. I. Henry King is with Socony Mobile Oil Co. in Boston. He is also our class agent, and I hope you read his letters and respond with more and more contributions for our class gift.

By the way, if it wasn't for Bev Dudley's little notes from time to time, the Class of '35 notes would be pretty skimpy. Please drop me a line now and then.—FRANCIS W.

1936

You will all be pleased to know that the Class Treasurer (with funds) has finally been located. Eli Grossman moved out to the West Coast last year; and before we had a chance to find out what mischief he was up to, word came that he was headed back east. Well, we have finally tracked him down but as yet have been able to get only his new address. Perhaps one of these days he will let us know what he is doing. Eli's new address is 104 Governor Bradford Drive, Barrington, R. I.

Since practically no news has been coming in, we will have to resort to changes of address as a means of keeping the notes alive. Paul Whittier has moved up from the deep South to 45 Huntington Road, Arlington 74, Mass. John Cox, meanwhile, has moved in the opposite direction. John's new location is Tepeyac #930, Chapalita, Guadalajara Jalisco, Mexico. Charlie Crede has added "Professor" to his name and also the new address of 390 South Holliston Avenue, Pasadena, Calif. Frank Bracken has invaded Texas: 111 Northeast 11th Street, Grand Prairie.

Al Bagnulo is on the move again; this time it's U.S.A.E.R.D.L. Fort Belvoir, Va. We will certainly miss seeing you around Manhattan, Al. To balance the ledger, Bill Creasy has located at 385 Madison Avenue, New York, with the Lummus Company. Roman Ulans left Virginia in such a hurry he forgot to note his new location other than Pipersville, Pa. Bernard Vonnegut made a short hop from North Scituate to 204 Merriam Street, Weston, Mass.; and Bill Abbott returned to the old Bay State. Bill is at 18 Stowell Road, Winchester.

Harry Donaldson's new address is Brush Beryllium Company, Elmore, Ohio. Dick Anderson is now located at C.O. Quarters, Mine Defense Laboratory, Panama City, Fla. Russ Miller is at 375 Wastena Terrace, Ridgewood, N. J. Ray McGrath is at 12240 Oak Park Avenue, Palos Heights, Ill.

We haven't heard of any of our classmates moving to the 49th state, but two have headed north: John Rowan is now located at 11844 Notre Dame Street, East, Pointe Aux Trembles, Montreal 5, P.Q., Canada; and Allan Campbell is now with Northern Electric Company, Ltd., P.O. Box 6123, Montreal, P.Q., Canada.

We don't like to report this colorless type of notes any more than you like to read them. However, you are the only ones who can do something to provide more interesting material—how about it?—JIM LEARY, *Secretary*, One Putnam Park, Greenwich, Conn.

1937

Baird Hodgkinson is manager, East Coast Sales of Simmonds Aerocessories, Inc., Tarrytown, N. Y. He and his wife, Marion, have moved to 266 Crest Drive, Tarrytown, N. Y. John Booton is superintendent of production, Gum Plant, Beech-Nut Life Savers, Inc., Canajoharie, N. Y. His wife, Catherine, is the authoress (C. Kage Booton)

of *The Troubled House*, 1958, and *Place of Shadows*, 1958, published by Dodd, Meade and Co. Their daughter Donna, 19, is a student at Cortland State Teachers College and another daughter, Susan, is in the eighth grade. Jim Clifford changed jobs in August, when he left Vertol Aircraft Corp. and rejoined the Martin Co., Baltimore, Md. Jim and his wife, Louise, have three children. Quentin Berg has been promoted to second assistant sanitary engineer. For changes, Quentin reports less hair. Quentin and his wife Kari have six children.

Our former secretary and now chairman of our 25th reunion, Windy Johns, was general chairman for the 111th convention of the Theta Delta Chi Fraternity at Spring Lake, N. J. Good training in preparation for our reunion, Windy. Bart Bennison and Bill Bergen have been nominated by the Alumni Association for the position of Alumni member on M.I.T. Corporation Visiting Committees. Once again it is good to see members of our Class participating in the affairs of the Institute. We also understand that Bill Bergen, Executive Vice-president of The Martin Co., has recently been elected to the board of directors. Ed Bartholomew, Professor at the University of Connecticut, participated in the 365th annual fall meeting of the New England sections, American Society for Engineering Education, at Harvard University, as chairman of the session on "The Teaching of Nuclear Metallurgy."

Ralph Chapin was recently elected director of the P. W. Minor Company, makers of Tredeasy shoes, along with his present position as president of the R. E. Chapin Manufacturing Works, Inc., of Batavia, N. Y. Ralph is a staunch supporter and an area chairman of our class gift program. Ralph's and Sanna's two oldest children were home this summer from their first year of secondary education in European schools. Their 17-year-old daughter was in England and their 14-year-old son in his second year in Germany. Bob Rudy, Robert P. Rudy Company, materials handling equipment, New York, N. Y., has recently opened complete facilities for materials handling engineering, sales, and service. Bob is chairman of the technical committee of the New York Chapter of the American Materials Handling Society; a member of the New York Chapter of the Society of Industrial Packaging and Materials Handling Engineers, and a member of the American Society of Mechanical Engineers. Al Busch gives a plug to Joe Heal and his class gift committee on the fine job they are doing. Our goal is now \$250,000.00 and it is up to all of us to support our committee. Al also informs us: "George Wemple paced the hospital floors on August 8 in expectation of the birth of his first offspring, a healthy young gentleman." Al continues his letter; "I am surrounded by four beautiful women, my oldest daughter, now a senior at Emma Willard School and ready to enter college next year. Time certainly flies! Looking at falling hair and increasing girth, I must say the years are taking their toll." Don't fret, Al, as we are all in the same boat.—ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford 55, Mass. S. CURTIS POWELL, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge 39, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

1938

Most of you either know or suspect that without the benefit of the clipping services these notes would be pretty skimpy. Consequently, it's a real pleasure to run across an item independently on occasion. This month I have a couple of them. First, the *Athol Daily News* of October 9 featured an article describing the opening of a new section of Route 2. Filling about one-quarter of the front page was a photo of a 589-foot bridge across the Millers River, the first all welded steel bridge in Massachusetts. The interesting part of the story is that the steel was fabricated and installed by Al Wilson's A. O. Wilson Structural Company. I have driven under the bridge, and it is a very impressive structure.

The second item appeared in the September 30 issue of the *Wall Street Journal*. An article there on inflation quotes Yale Brozen, who is professor of economics at the University of Chicago. He states: "My salary is fairly fixed, so I have myself hedged. I saw this coming back in 1945, and I got myself in hock so bad to buy a house, apartment building, and common stocks that I thought I would never see daylight. But now on the apartment alone I'm making a 30 per cent return on my investment."

Carl Bausch and William S. Cowles, Jr., '49, have announced the formation of a partnership for the practice of architecture in Shelburne, Vt. Given Brewer's firm, which specializes in stress analysis, appears to be prospering. The Brewer Engineering Laboratories of Marion, Mass., recently moved into new quarters. The organization consists of about nine persons.

Brigadier General Kenneth E. Fields (U.S. Army, retired), who was formerly general manager of the Atomic Energy Commission, has been elected executive vice-president and member of the board of International Standard Electric Corporation, a subsidiary of International Telephone and Telegraph Corporation. Colonel Alvin Welling has been nominated for promotion to the rank of brigadier general in the Army.

We received notes from a few of the men who couldn't make the reunion. Ken Gunkel wired his regrets from Lima, Peru. Sam Steere indicated a change in plans. He was unable to make the reunion because he was on his way for a three-year tour of duty in Okinawa. Consequently he had a Mark VII Jaguar on the market, since he didn't trust the spare parts market where he was headed. From Harry Hollander's letterhead we find that he has the Industrial Plastic Coating Co. in Montreal that he is operating. We have also learned that Jack Wallace is now chief engineer of Hapman Conveyors in Michigan, and that Mike Forman is involved in industrial insurance and in real estate as a sideline in Ridgewood, N. J.—DAVID E. ACKER, *Secretary*, Arthur D. Little, Inc., 35 Acorn Park, Cambridge 40, Mass.

1939

Manning Morrill has accepted Doc Wingard's appointment to sparkplug the 1939 class gift drive. As most of you know, each class makes a donation to the Institute on its 20th anniversary. While we'll all feel pleasure in returning a token to the Insti-

tute which truly has made possible so many of the fine things we are able to enjoy every day in each of our lives, the immediate problem, Manning says, is to get a few fellows who will volunteer some time and energy to help put the project together. Let's all think seriously of this matter; and will those who can please volunteer some help directly to Manning, who is vice-president of Cryovac Division of W. R. Grace and Co.

Other news from Boston comes from a news release about Brownie Parker, who participated in the annual fall meeting of the New England section, American Society for Engineering Education, at Harvard on October 10.

Harry Wexler made the headlines on two accounts recently. As one of five coauthors, he wrote "A Meteorologist Looks At the Upper Atmosphere," which is one section of a book entitled *Atmospheric Explorations*, just published by John Wiley and Sons and the Technology Press. On the second count, Harry has left his igloo at the South Pole and has returned to the U.S.A. via Moscow where, during July and August, he attended a meeting of International Geophysical Year scientists. Between speeches and travels, Harry wears the hat of director of Meteorological Research for the U. S. Weather Bureau, in Washington.

Kenneth D. Roberts is in line for congratulations following his appointment as assistant professor in the School of Engineering at the University of Massachusetts. Ken has done industrial work with Chase Brass and Copper Company, Revere Copper and Brass Company, and American Steel and Wire Company. On the academic side, he has instructed in metallurgy at Bridgeport Engineering Institute, University of Connecticut Extension Division, and Hillyer College.

From the August 5 issue of the *American* newspaper in Boston: "Henry F. Baker, 40, of Dobbs Ferry, N. Y., who died July 28 at Doctor's Hospital, New York, was a former resident of Cambridge. He was a mechanical design engineer for the piping division of Scientific Design Corporation, New York City.

"A graduate of M.I.T., he is survived by his wife, the former Louise Smith of Waterbury, Conn.; a son, Henry S., Jr., of Dobbs Ferry; his mother, Mrs. Evelyn Baker; two sisters, Mrs. Arlene Harriman of San Gabriel, Calif., and Mrs. Mildred Anderson of Willimantic, Conn.; and a brother, Arthur, of Amesbury."

Alexander Squire was recognized by both the *Boston Evening Globe* and *Record* on August 15. One story ran: "Two events taking place thousands of miles apart made Sunday, August 10, a big day in the lives of the Alexander Squires.

"Far to the North, the U.S.S. *Skate*, the nation's third atomic submarine, glided into Arctic waters on its way to the North Pole and the first East-West exploration of the Northwest Passage. Mr. Squire, a native of Boston, had directed much of the work which produced the atomic power plant for the *Skate*. But on Sunday morning his mind was on other things. For at 8:00 A.M. Mrs. Squire, the former Isabelle Kerr of Waltham, presented him with a nine-pound baby boy, Philip, their fifth child.

"Mr. Squire, a member of the Westinghouse Bettis Atomic Power Division, at Pittsburgh, Pa., since 1950, was manager

of the *Skate* nuclear power project. The atomic power plant for the *Skate* was designed and developed by his Westinghouse Group under the direction of and in technical co-operation with Naval Reactors Branch, U. S. Atomic Energy Commission.

"The fast-breaking story of new achievements by the *Skate* promised to bring additional recognition to Alexander Squire and his people. Previously they have been commended by Admiral A. G. Mumma, chief, U. S. Navy Bureau of Ships, for 'their skill and concerted efforts' which helped the *Skate* put to sea more than six months ahead of her contract delivery date....

"During World War II, while doing secret work at Watertown Arsenal, Alex won the award for meritorious civilian service. At Westinghouse, the 40-year-old atomic scientist has been awarded the Westinghouse Order of Merit, the highest honor conferred by his company for technical leadership and management ability in the development of the nuclear propulsion plant for fleet-type submarines."

J. William Mohlman, information Coordinator at the Whiting Research Laboratories of the Standard Oil Company (Indiana), spoke during September before the Chicago meeting of the American Chemical Society. He described methods of organizing staffs that handle technical information.—HAL SEYKOTA, *Assistant Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

1940

Your Secretary was in Cambridge recently in connection with the Alumni Fund drive. While there, I had the pleasure of seeing Jack Danforth and Larry Bernbaum. Larry is the new class agent for the drive, and is also president of Dynametrics Corporation, Burlington, Mass. I also had a pleasant chat with Sam Goldblith in his office. Even though it was a Saturday, Sam was hard at work—an illustration of the fact that your contributions to the Alumni Fund are put to good use. Before returning home, I visited Milt and Gitty Green and their three daughters. Milt is a research chemist with Polaroid.

Our Class has been honored with two more appointments as Alumni members on the M.I.T. Corporation Visiting Committees. John Hollomon has been appointed to the Visiting Committee for the Department of Metallurgy, and Julius Molnar has been selected for the Visiting Committee for the Department of Physics. The Visiting Committees are normally composed of nine members: three members of the M.I.T. Corporation; three non-M.I.T. members chosen by the president; and three M.I.T. Alumni members recommended by the Alumni Association. Ordinarily, the committees meet once a year. The purpose of the committee is to give the department the benefit of advice and opinions of an interested group other than those actually connected with the M.I.T. Faculty or Administration.

As further evidence that members of our Class are going ahead in their fields, Karl Pfister, 3d, has been appointed executive director for Developmental Research of the Merck Sharpe and Dome Research Laboratories. Karl joined Merck in 1942 as a senior chemist and subsequently served as manager of Technical Development and director of

Synthetic Medicinals Research before being appointed director of Process Research, his last position prior to his new promotion. Karl is the author of numerous scientific papers and holder of several patents.

Peter Colmar has been nominated by President Eisenhower for the position of Rear Admiral.

While Jack Danforth has given up his position as class agent for the Alumni Fund drive, he is still actively connected with eleemosynary endeavors. Jack is section chairman in the Commerce and Industry Department of the Westwood United Fund Campaign. Jack is vice-president of High Voltage Engineering Corporation of Burlington, Mass.

Schrade Radtke has been appointed director to head a co-operative research program of 19 lead and zinc producers on four continents. He will develop plans governing the research projects under the direction of the industry development committees of the American Zinc Institute and the Lead Industries Association. Schrade will also have the responsibility of recommending the degree of emphasis to be placed on fundamental and applied research. Previously, Schrade was director of the Metallurgical Research Laboratories of the Reynolds Metal Company.

These notes are being written in the midst of October's bright blue weather; but by the time they reach you, undoubtedly snow will be on the ground. Your Secretary wishes each of you a Merry Christmas and an interesting and successful new year.

One thought I would also like to leave with you: are you lazy? Write your letters the easy way. One letter to Al does the work of hundreds—The Tech Review reaches all your friends at Tech.—ALVIN GUTTAG, *Secretary*, Cushman, Darby, and Cushman, American Security Building, Washington 5, D. C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

Howie Samuels has written to tell us that his sales forecast for 1960 was actually only a hundred million dollars instead of a billion, as reported in the July column. Oh, well; what's a misplaced decimal point among friends? Howie continues: "Recently, together with Textron, we sold the Kordite Company to National Distillers and Chemical Corporation of New York City and are operating as a 100 per cent subsidiary of National. We have employment of about 1,000. Included in this figure are about 15 M.I.T. men and 25 from Harvard Business School. But I have always said that 15 M.I.T. men can balance 25 Harvard men any day."

A press release just received has provided a very complete story on Roger Robertson, who, as Don Scarff reported last spring, is now chief engineer of the B. and H. Instrument Company of Fort Worth, Texas. B. and H., whose principal products now are precision instruments for field testing of aircraft jet engines, is aiming for new and better electronic instruments for automation in industrial and defense applications. Previously, Roger was with Hughes

Aircraft Company in California as assistant project manager for the development of the integrated electronic system for the Convair F-106; before that, he was manager of instrumentation engineering for General Electric's Missile and Ordnance Systems Division, and concerned with instrumentation of the nose cone for the Atlas Intercontinental Ballistic Missile. His earlier positions include those of engineer at Bell Aircraft Corporation, chief of the Instrumentation Branch of the Naval Ordnance Experimental Unit at the Bureau of Standards, chief of a section of the Bureau of Standards devoted to development of arming and fusing of guided missiles, and senior engineer at Laboratory for Electronics in Boston. He received his Bachelor of Laws degree from George Washington University in 1952. He has a ten-year-old son, a one-year-old daughter, and a newly born son.

Frank Wyle, president of Wyle Laboratories, El Segundo, Calif., has announced that his organization is now testing missile propulsion components with full operational flows of cryogenic fluids (-300 degrees F.), and at the same time subjecting them to vibration and acceleration simulating actual flight conditions. Only by combining test conditions in such a way, says Frank, can adequate weapons system reliability be achieved. Miles Ross is also active in the missile field: a story in *Newsweek*, on the attempted moon shot from Cape Canaveral in August, listed him as one of the three men in overall charge of the countdown.

A number of Class members have been describing their activities in papers delivered to technical society meetings: Basil Staros, engineering section head for astronautics in the Weapon System Engineering Department of Sperry's Air Armament Division, who gave a paper on "Systems Considerations—Missile Aerodynamic Design" at a seminar on missile operations research held at Pennsylvania State University; Lloyd Wilson, engineering section head in Sperry's Electrical Measurements Laboratory, who presented a paper entitled "A Centralized Facility for Electrical and Microwave Calibrations in a Large Company" at the Electronic Standards and Measurements Conference in Boulder, Colo.; Charles Corliss of the National Bureau of Standards, whose paper on the "Energy Levels and Spectrum of Singly Ionized Iodine" was given at the annual meeting of the Optical Society of America; Alan Shapley of the Bureau of Standards, who discussed the International Geophysical Year at the 1958 National Electronics Conference; and James Austin, of the Institute's Department of Meteorology, who gave a paper on "Some Meteorological Aspects of Structural Design in Northern Latitudes" at the second National Conference on Applied Meteorology. At this same conference John Biggs, of the M.I.T. Structural Engineering Department, was chairman of a session on wind and structural engineering.

Al Bowker has been renominated as an Alumni member of the M.I.T. Corporation Visiting Committee for the Department of Mathematics; and John Sluder has been nominated to the Committee for the Department of Food Technology. In addition to his extracurricular activities with the National Society of Professional Engineers and with the Little League, Walt Kreske is the president of the Smith Homestead As-

sociation, a group organized to preserve the home of the author of the hymn "America" Samuel Francis Smith.

The secretaries and the class officers wish all of you a very merry Christmas and a prosperous, healthy, happy new year!—IVOR W. COLLINS, *Secretary*, 9 Sunnyside Drive, Dalton, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

We are pleased to note that Jack Madwed of Bridgeport, Conn., and Bill Tallman, of Manchester, N. H., made important contributions to the Alumni Fund last year. They were regional chairmen in their respective communities and accounted for better than 66 per cent participation of local Alumni. This year's Alumni Fund activities have started off on an even more expanded basis with Carl McGinnis of Washington, D. C., serving as the Class of 1942 special gifts chairman. By now, many of you have received Charlie Speas's fall letter about Alumni Fund activities. Gene Brady, Harvey Kram, and your Secretary joined Charlie for a very pleasant visit at the second annual Alumni Fund Conference at the Institute. Part of our planning duties consisted of appending personal notes to copies of the class agent's letter. We regret that the lack of time did not permit us to write to more of you.

The Institute has announced that Charles H. Smith, Jr., has been nominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for Sponsored Research. Charlie will join members of the Corporation, fellow Alumni, and representatives selected by Acting President Stratton in reviewing annually the activities of the Division of Sponsored Research and giving this Department the benefit of their advice and opinions.

A note from the Alumni Office tells us that Barton L. Hakan has been elected secretary of the M.I.T. Club of Kansas City, Mo. William Hahn has been appointed a member of the Educational Council for the Baltimore, Md., area. Bill recently moved from the Boston area to Ellicott City, Md. He is now a store manager in the Westview Shopping Center for William Hahn and Company of Baltimore and Washington.

Edward S. Berestka of Easthampton, Mass., has recently been appointed a teacher in the school system of Chicopee, Mass. Address changes of the month include Jonathan H. Noyes, who moved to Corpus Christi from San Antonio, Texas. Harry J. Paletz, Jr., is now living in Joliet, Ill.; Karl E. Wenk, Jr., has moved from Greenwich, Conn., and is now living in Meadowbrook, Pa.

Your Secretaries hope that by now all the Christmas cards have been addressed, all the presents purchased, and there is still lots of money in the bank for a sizable year's end contribution to the M.I.T. Alumni Fund. Ed Edmunds in Albuquerque, J. J. Quinn in Hawthorne, and Bob Keating in East Alton join me in wishing you and your families a very merry Christmas and a happy new year.—LOU ROSENBLUM, *Secretary*, Photon, Inc., Cambridge, Mass.

1943

Bob Byloff gave a talk on the National Broadcasting Company Burbank Color Video-tape Plant at the eighth annual broadcast symposium of the Institute of Radio Engineers in Washington in September. Two classmates who received master's degrees in Meteorology with us, H. E. Cramer and Charles Gilman, gave papers at the second National Conference on Applied Meteorology at Ann Arbor, Michigan: the former on wind stress on structures and the latter on quantitative precipitation forecasting. Charles Satterfield participated as a panel member on chemical engineering education at the American Society for Engineering Education meeting at Harvard in October.

Charlie Chubb of Sperry Gyroscope presented a paper on "Beam Rider Guidance" at the National Conference on Military Electronics in Washington in June. Greg Gagarin has been elected president of the New Haven County M.I.T. Club. Harold Peardon was appointed vice-president of Electronics Corporation of America, located in Cambridge, where he has been in various management capacities since graduation. Robert Everett has been named technical director of the MITRE Corporation, an M.I.T. offspring formed to provide the Air Force with scientific and engineering services. He has been at the helm of Lincoln Laboratory's Digital Computer Division.

Herbert Goldstein, who received his doctor's degree in Physics with our Class, is the author of a book on nuclear radiation shielding, published by the U. S. Atomic Energy Commission. Dr. Goldstein is senior physicist at Nuclear Development Corporation of America. Dr. Marjorie K. Smith, M.D., who received her Public Health degree with our Class, has been appointed the first full-time medical director of the Kentucky Crippled Children Commission. She has had international experience working with children and was formerly with the City Bureau of School Health in New York.

Ward Haas has been renominated by the Alumni Association for the position of Alumni member on the M.I.T. Corporation Visiting Committee for the Department of Biology. Jim Hoey, Jr., participated in a conference on Twentieth Century Fans in Hartford on September 26, at which meeting your Secretary was privileged to be present. The affair, attended by representatives of fan and blower manufacturers, was a discussion of the relative merits of fan applications.

A total of Four Hundred Ninety-five Dollars has been received in Class dues since the solicitation began last spring. Our Class can do better; so I wish to remind one and all that the \$15, or whatever you wish, can be sent to me, payable to M.I.T. Class of 1943. To those who have so far contributed, many thanks.—RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn. *Assistant Secretaries*: CHRISTIAN J. MATTHEW, 314 Battery Street, San Francisco 11, Calif.; JOHN W. McDONOUGH, JR., R. R. #1, Donwood Drive, Naperville, Ill.

10—'44

Chatham Bars Inn, site of our 15th reunion next June 12 to 14, offers really fine facilities for a week end you should not miss! The committee planning the reunion

has lined up a number of special features, such as a vast clambake on Sunday, sailing in Tech dinghies, and plenty of socializing. The location of the Inn with its wonderful beach, golf course, cottage housing, and so forth should offer variety and interest to anyone. We're counting on an even larger turnout than in 1954, so make your plans now.

By now you have received the class agent letter from Scott Carpenter asking your support for the Alumni Fund. When John Hull, Scott, and I met at the Alumni Fund Conference at the Institute in September we observed that because ours is a small Class we could strive for participation from every member with at least a possible chance of success. Won't you budget a contribution to M.I.T., in recognition of the fact that the days of the few very wealthy donors are quickly passing and that mass Alumni support of private education is becoming more vital each year?

Last June Professor F. Joseph Amrhein, Head of the Department of Business Administration and Economics at St. Michael's College, Winooski, Vt., was awarded his doctorate by New York University and named the outstanding 1958 graduate of the University's Graduate School of Business Administration. Joe is also a faculty member of the American Institute of Banking, member of a Certified Public Accountants firm, and a consultant to the Vermont state government. Joe and Ethel are living in Burlington with their three children. Other names in the news are Dewey Nelson, appointed assistant manager of the Becco Chemical Division, Food Machinery and Chemical Corp., Buffalo, N. Y.; Jim Hield, named manager of the Peoria, Ill., sales office of the Trane Company; Lou Roddis and Al Van Rennes, both participants in the fourth Nuclear Engineering and Science Conference in Chicago last spring; Ryder Amthor, now associated with the Portable Electric Co., Chicago; and Jim Mulholland, who has recently changed the format of one of his publications, *Electronic Week*, from a news magazine to a no-advertising newsletter.

We can use more notes for subsequent columns, so why not send us the latest word about yourself—on a Christmas card for example.—KENNETH G. SCHEID, *Secretary*, 24 Lee Street, Marblehead, Mass.

1945

Not too much news from the clipping services this month, although we did receive one memo indicating that Dean Harvey Brooks was to speak on "Energy—It's Production and Use in the World of the Future" at the fall meeting of the New England section, American Society for Engineering Education at Harvard University.

I had a most interesting and unusual three-hour layover at the Syracuse airport in mid-September. About five o'clock I called the George H. Bickford residence expecting to find only Betty and the kids home; unexpectedly, George answered the phone. No, George, has not retired; nor is he a banker but only a struggling engineer at Carrier Corp.—now assistant manager of System Manufacturing Engineering with 15 or 20 engineers working in his group. I hadn't talked with Curley since he had left Whitin Machine Company in Massachusetts six or

seven years ago. Unfortunately, we did not get together, as Betty was in the hospital recovering from a knee operation. George indicated that Betty's troublesome knee was an outgrowth of an old ski injury incurred during courting days. By now the Bickford household should be back to normal.

Fortunately, the Mohawk Airline booth is in a direct line between the telephone booths and the bar at the Syracuse Airport. Whom should I stumble into but Al Werner, checking in from a Newark flight. Al had nothing planned so we enjoyed a leisurely dinner while we bounced over old acquaintances and still older times. Al left Raytheon and greater Boston last spring to become a divisional sales manager for Hughes Aircraft in the Newark area; unfortunately, Hughes dropped Al's potential line before he actually started work; so he is now doing product development work for Hughes. While in Boston Al saw quite a bit of George McKewen, so he said; Al also mentioned that his old roommate in the Grad House had become quite a thespian up in the Schenectady area. Yes, Bruno DePaoli spends his evenings acting while he pines his days away at General Electric with the hope of a New England transfer in the future. The last time Fran and I saw Al and his wife was about a month or so before their marriage in '54; so we were very pleased to hear of the arrival of Lynn, 2 and one-half years, and Mark, six months.

Much to the surprise of our wives, Jerry Patterson and I didn't even open the can of paint, let alone paint the town red, when he was in town the 26th and 27th of September. As secretary of the organization, Jerry had to plan and arrange the fall meeting of New York state's Association of Steel Fabricators. I joined the group for a couple of snifters at the end of their happy hour before Pat and I adjourned for dinner and a good off-Broadway production down in Greenwich Village. A couple of beers, a lot more chatter, and I was on the 12:15 for Stamford. Jerry seems very happy in Binghamton, and for a native New Yorker he had little love for the big city.

In early October I had a brief note from Dick Jorgenson up in Simsbury, Conn. Dick is still selling advertising space, as he has for the past 12 years. Dick is now eastern sales manager of *I.S.A. Journal*, the official publication of the Instrument Society of America. I hope to see big Richard when he hits New York early in the year.

George, Al, Pat, and Dick are all planning for our 15th reunion next year; they are quite concerned also, as to what the Class of 1945 intends to do about a 25 year gift, as are we. Are you?

Don't forget Bill McKay's Fund appeal. We wish you and your families a most pleasant holiday. See you next year; let's hope it is prosperous!—C. H. SPRINGER, *Secretary*, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N. Y.

1946

A number of our classmates have been active in the fall conference circuit. Louis B. Wadel, of Chance Vought Aircraft, Inc., was conference chairman at the Institute of Radio Engineers National Simulation Conference on October 23, held in Dallas, Texas. Dr. Thomas F. Malone, Director of

Research of The Travelers Insurance Companies, Hartford, Conn., acted as chairman of a session at the second National Conference on Applied Meteorology held at Ann Arbor in September. Howard F. Taylor gave a paper entitled "Engineering Materials versus Solid State Sciences" during the session on mechanical engineering at the fall meeting of the New England section, American Society for Engineering Education at Harvard in October.

For the "We knew he'd succeed" department, I would like to quote quite liberally from the August 29 issue of the *Hartford (Conn.) Times*: "Development of a new type ship propeller, which Navy officials say opens unlimited speed possibilities, is from research of a former West Hartford man. The propeller was developed through the work of Marshall P. Tulin, M.I.T., 1946. He is with the Office of Naval Research branch office in London. The Office of Naval Research this week announced the development of the propeller. It said the achievement can reasonably be compared in magnitude to the development of jet propulsion for aircraft. Navy officials spoke of future ships, with radical new hulls, that could travel at speeds of 100 to 150 knots as a result of the new propeller.

"From Mr. Tulin's discovery of new and efficient hydrofoil profiles, scientists at the David Taylor model basin developed what they called a super-cavitating propeller. Cavitation—the formation of a vacuum around speeding propellers—has been a major barrier to faster speed for ships because of a vapor pocket that cuts propeller efficiency. Mr. Tulin's studies showed that when the cavitation vapor pocket became longer than the width of the propeller blade, super-cavitation developed, providing a free flow of water. The super-cavitating propeller differs mainly in appearance from the normal propeller in having a knife edge and sharp profile. Mr. Tulin said this type propeller developed its full potential at high rotating speeds. He added that this was particularly important because high rotating speeds were an inherent characteristic of the new marine gas turbines which provide great advances in power for ships."

Weston W. Goodnow was married on August 16 to Miss Jane Updike of Princeton, N. J. Wes is with the American Chain and Cable Co. in York, Pa. S. Anthony Urano, an application engineer in the metal rolling and processing engineering section of the General Electric Co. of Schenectady, N. Y., recently made a tour of Japanese steel making facilities in Japan. He lives with his wife and son at 21 Jane Drive, Scotia, N. Y. Received a nice letter from Warren Turner, which I will repeat in part: "My company (New Jersey Bell Telephone Co.) is sending me to the Institute of Humanistic Studies for Executives at the University of Pennsylvania for the period September '58 to June '59. The program, all liberal arts, was developed five years ago by the University and the Bell Telephone Co. of Pennsylvania, and two years later was widened to include personnel from all Bell System companies. This year an effort is being made to include men from other industries. The student body of 20 to 24 takes up courses covering the major part of the liberal arts field including art, literature, music, philosophy, economics and logic—quite a mouthful for a Tech man to chew on! As you may know, this course is part of

a Bell System program to provide additional liberal arts training for middle management people. Since many activities during the year are husband and wife affairs, the whole Turner family is moving to Lansdowne, Pa., 251 North Highland Avenue, on September 1, where we've rented a house for the school year. The family activities include several week-end trips to museums, art galleries, concerts, and shows in New York City, Washington, and Philadelphia. The course has its cram aspects. I understand from the N. J. Bell man who attended last year that the reading requires six hours per day plus six hours of classroom work. So, I'll be a busy 'beaver' for the next 10 months."

As part of the United Aircraft Fellowship program, J. Charles Ajemian, who is on the engineering staff of Sikorsky Division of United Aircraft and lives at 120 Clarkson Street, Bridgeport, Conn., received his master's degree in Engineering Mechanics from Yale University in June. Another item regarding Yale: the Reverend John A. Russell, Jr., of Milford, Conn., has been named Methodist chaplain at Yale University and executive secretary and minister of Wesley Foundation, a student organization. In addition to attending M.I.T., John attended Lehigh, the University of Edinburgh, and Yale Divinity School. He holds a degree in Electrical Engineering as well as a bachelor of divinity and a master of sacred theology degree. He has done relief work in Naples, Italy, where he served the Italian Service Mission and the Casa Materna Methodist Orphanage. Miss Marion G. Hogan, one of the fairer members of our Class, operates her own business, Weather Services, Inc., of Boston. Speaking to the Haverhill, Mass., Rotary recently she told how modern conveniences that make our lives so comfortable are making us more vulnerable to weather. Since storms can disrupt much of the modern civilization, shutting down facilities for days, heavy reliance on weather forecasts is necessary for industries of electricity, transportation, and heating, from which Miss Hogan draws many of her firm's customers. She spoke of the time her firm warned the Connecticut Light and Power Co. that hurricane Carol was on its way eight hours before the first U. S. Government weather bulletin, a warning which enabled the utility to prepare adequately. Robert C. Urquhart writes from 7128 South Lowe Avenue, Chicago 21, Ill., to say that he is home from Taegu, Korea for a one-year furlough as missionary of the United Presbyterian Church of the U.S.A. He will be studying toward a master of theology in Industrial Evangelism at McCormick Theological Seminary.

I find myself very busy right now trying to run the United Fund drive for my town, and have squeezed this in between phone calls and emergency trips to all parts of town. Thus the somewhat abbreviated but, I hope, interesting notes. See you next year. —JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1948

Culling through my notes on '48, I don't see a single wedding announcement this month—guess by now all you fellows are married off with this assistant secretary, Harry Jones, one of the last holdouts up until last January. Quite a prolific Class,

too, if last June's reunion data holds for all.

At my "hitching" it was great to see Dick McCally, J. T. Reid, Walt Mindermann, and Eric Kula again. Dick and his charming wife, Sally, are still making Fairfield, Conn., their home where he is with Manning, Maxwell and Moore. J. T. is busily co-ordinating research projects for the American Society of Mechanical Engineers, while Walt has gone afieid from engineering with his meat processing business in New York. Eric continued his scholarly pursuits beyond '48 in Sweden and at Tech for his Ph.D. in Metallurgy.

The M.I.T. Club of New York's annual beer party is usually a rallying place for local freeloaders of Ruperts Dark, but only Joe Sullivan could be found this year. He was looking forward to the reunion, but Kevin Michael Sullivan, born June 3, ended any hopes of making it to Lenox the following week. Joe is selling mill products in New York for the American Brass Company and living in Fresh Meadows, Long Island, N. Y.

The stork also paid another visit just before Alumni Day, this time to Mr. and Mrs. Jack Mitchell in Lowell, Mass., where a Junior was born.

Arnold Smith wrote us recently that after two years in engineering administration with The Martin Company in Baltimore, he transferred to New York City as area supervisor of Supplier Quality. Arnold, Marje, their three sons and one daughter are now living at 423 Birch Place, Westfield, N. J. Congratulations are also in order to our new assistant secretary, Bob Mott, on his appointment as head of the Mathematics Department at Hebron Academy in Hebron, Maine. From Wellesley, Mass., also comes word that Mr. and Mrs. Stanley Shein now reside there at 4 Ashmont Road. Stanley is production manager of Smith and Bennett, Inc., Boston uniform manufacturers.

Frank Jones was recently appointed as M.I.T. educational councilor in Memphis, Tenn. Frank, a Vice-president of Cook and Company, Inc., lives at 4036 North Walnut Grove Circle, Memphis. Other newly elected Alumni club officers are Charles Axelrod as president of the M.I.T. Club of Cincinnati; Jean Leinroth of Charleston, W. Va., as president of the M.I.T. Club of the Kanawha Valley; and Bill Lyons as secretary of the New Haven County M.I.T. Club.

The Class of 1948 has been well represented before various engineering groups. Dr. William D. Kingery was awarded the John Jeppson Medal of the American Ceramic Society at their annual meeting in Pittsburgh, Pa. The large gold medal is awarded annually for distinguished achievement in the realm of ceramics. Bill's now associate professor at M.I.T. in the Ceramics Division of the Department of Metallurgy. Arthur Clymer, of North American Aviation, Columbus, Ohio, spoke to the Institute of Radio Engineers National Simulation Conference in Dallas, Texas, on "Operational Analog Simulation of the Vibration and Flutter of a Rectangular Multicellular Structure." At the recent Denver meeting of the American Meteorological Society, Myron Ligda presented a paper on "Mesoscale Vortex Patterns in Radar-Detected Precipitation Areas." A clinic on heating problems was conducted by Al Brayman at the management exposition of the Rental Housing Association in Boston.

The Reverend Clifford C. Ham has been the subject of several articles in Baltimore newspapers publicizing his fight against substandard living conditions, while serving as pastor of a Baltimore church. Cliff studied city planning at M.I.T. and attended Andover Newton Theological Seminary. While taking further study in city planning at the University of Pennsylvania, he will also instruct a course in "Church and City Planning" at the Wesley Theological Seminary, Washington, D. C. Cliff and Mrs. Ham have three sons and are making their present home in Philadelphia, Pa.

We understand that Dr. G. Bruce Kline out at Eli Lilly in Indianapolis, developed a new and much less expensive method of making glutamine, an important amino acid.

Your class secretaries wish you all the best of seasons greetings. Harry G. Jones.—RICHARD H. HARRIS, *Secretary*, 26 South Street, Grafton, Mass. HARRY G. JONES, *Assistant Secretary*, 94 Oregon Avenue, Bronxville 8, N. Y. HERBERT S. KINDLER, *Assistant Secretary*, 128 Elatan Drive, Pittsburgh 16, Pa. ROBERT R. MOTT, *Assistant Secretary*, Box 113, Hebron, Maine.

1952

Well, here we are again and with no backlog of material to draw on. What are you all doing out there? We are starved for news back here. First item that comes to mind: I have here before me Stan Sydney's latest class agent letter and also the Alumni Fund report. I'd like to second Stan's plea for increasing donations to Tech, and I'd like to see more people giving—only 437 of us did last year. Don't claim to speak for everybody, but I feel personally I owe a great deal to Tech; and this is one way of helping others to have the same advantages.

Letter in the mail from Assistant Secretary Jim Margolis, who is now not only representing Kellogg Associates (industrial marketing consultants in Salem, Mass.) but is also doing independent market research in the New York area. Jim prefers to work in pharmaceuticals, plastics, and organic intermediates, and is starting to build up a following from his office at 10 East 39th Street, New York, N. Y. Incidentally, Jim will be doing the column for January while I'm on vacation—short cruise to the West Indies.

'52 seems to be getting more active lately in M.I.T. Clubs: congratulations to Richard Aquadro, President of the M.I.T. Club of the Connecticut Valley; Bennett L. Basore, President of the M.I.T. Club of New Mexico; and Narciso S. Padilla, Secretary of the M.I.T. Club of Cuba.

Ken Bohlin has just joined the Operations Evaluation Group, an M.I.T. sponsored research group, as a mathematical consultant, and now moves to Washington, D. C. Ken's wife, by the way, is Albany N. Y.'s "Miss Connie" on Channel 10's television program "Romper Room." Ken just completed his master's degree at Rensselaer Polytech.

Jerome D. Wayne was honored by the Massachusetts Medical Society as one of three for "diligent work and qualities serving to designate a good physician," while at Boston University School of Medicine. Dr. Paul E. Aldrich recently joined the research staff of Du Pont's Central Research Department as an organic chemist at the experimental station near Wilmington. And from M.I.T.'s MITRE Corporation (formed to pro-

vide the U. S. Air Force with technical services), we hear that John F. Jacobs has been appointed associate technical director.

R. Wendell Phillips, Jr., member of Perry, Shaw, Hepburn, and Dean, architects, is a section chairman of the commerce and industry department of the 1959 United Fund Campaign and is also active in the Greater Boston Junior Chamber of Commerce. And Rodney A. Shuart spoke to the Manchester, Conn., Rotary Club concerning the aircraft industry's search for "cream of the crop" engineering students. He's at Pratt and Whitney, and working toward his master's degree at Harvard Business School. John S. Rydz of Radio Corporation of America Defense Electronic Products, Camden, N. J., gave a paper at the Optical Society of America in Detroit in October: subject, "Colorimetric Considerations of a Color Electrofax Process." Roger R. Borden and Robert E. Ogilvie were panel members at the fall meeting of the American Society for Engineering Education, New England section.

Donald H. Moran was one of three presenting the paper "Problems in Predicting Local Upper Winds" at the National Conference on Practical Problems of Modern Meteorology in Denver.

And so with these few notes, this column comes to an end. How about a line to let us know where you are, what you are doing, or what someone else is doing? **DANA M. FERGUSON, Secretary**, 366 Main Street, Lynnfield Center, Mass. **JAMES M. MARGOLIS, Assistant Secretary**, 219 Richbell Road, Mamaroneck, N. Y.

1953

There is quite a contingent of classmates here in the Boston area. In addition to those mentioned in the last issue, there are Tom Faulhaber, Phil Bianchi, Jake Kerwin, Bill (Oliver Hardin) Gilbert, Kent Hansen, Bob Reid '54, and Corky d'Oliveira '54.

Tom and Jake are living in the same apartment house as your "writer's cramp" expert, and both are still single. Tom has been working for Ganteaume McMullen (consulting engineers) for the past year and a half, and has been carrying out economic studies on various projects and doing some design work. Previously, Tom received his master's in Business Administration at the Harvard Business School and served with the Corps of Engineers for two years. Apparently his service duty was reasonably enlightening, as he was project engineer on various civil works projects for the Corps. One of the more interesting jobs he held was assistant project engineer for the Dalles Dam construction. Jake Kerwin is now back at M.I.T. as an instructor in Naval Architecture following graduate study in Delft, Netherlands, on a fellowship. And, as you might expect, he is still active in the sailing world and participated in the Bermuda races this June. (Seems to me he got a second place in the contest.) Phil Bianchi, another bachelor, is occasionally seen roaming around in his white convertible, though at the present time he is in Europe. I understand he is working for United Shoe Machinery following a two-year tour of duty with the Air Force.

Brother Gilbert, as you know, was married in January in the M.I.T. chapel. After his two years' service, Bill returned to M.I.T. to work on his Ph.D.; he's passed his exams and now only has the small task of doctoral

thesis remaining. Saw Corky and Alice d'Oliveira at the Gilberts' wedding. They have a reasonably large family of three (?), and are living closeby. As I recall, Corky is working on atomic submarine construction with the Navy.

Was very surprised to run into Georges Marcou (remember Tech Show?) earlier this year at the Highway Research Board in D. C. He is a city planner in Urbana, Ill., and is married. It might be well to add that he still has all that boundless energy.

Don West '52, one of our '53G classmates, and his wife Marcia are living out in Seattle, Wash., where Don is an aeronautical engineer for Boeing. They have bought a home, and a few months ago adopted a six-month-old youngster. Bob and Betty Reid are in town; in fact both are at M.I.T. Bob is a research assistant in the Mechanical Engineering Department, though Betty is pulling down most of the money as a research engineer in the Metallurgy Department. A short time ago they bought a home in West Acton, where the main activity seems to be raising kittens.

Louis Kaufman received his Ph.D. in Applied Mechanics this June from Brooklyn Polytechnic Institute. Ted Brown completed his doctorate in architectural engineering while in Holland on a Fulbright Scholarship. Prior to that he received a master's degree from M.I.T. He and Barbara and young daughter are living in Louisville, Ky., where he is an assistant professor at the University of Louisville. Philippe Bouchard, a former classmate who transferred to West Point and graduated in 1955, was married this July. He and Carol Ann will be stationed at Selfridge Air Force Base, where he is a jet pilot. Apparently Gordon Beals is also serving in the Air Force; he recently was transferred from Stewart to Langley Air Force base near Newport News, Va. I have no confirmation on this, but as rumors have it, Ken Douglas was married this summer. For the past two years he has been working at M.I.T. but he apparently switched jobs over the summer. Robert Stalow recently got out of the service where he was serving at the Army Chemical Center, and is now with the Department of Chemistry at Tufts University.

Quite a few classmates have been married in recent months. Jerry Connor married Barbara Masse this June. Prior to that Jerry was an instructor at Tech and was completing his doctoral studies while Barbara graduated from Massachusetts General School of Nursing. In July there were three marriages. Matthew Mulhern took the vows with Ann Seaver, a graduate of Regis, and is living in Arlington. Matt is now back at M.I.T. for graduate study, following four years' duty in the Navy. Alfred Brenner and Rosamond Drooker were married later in July, and will be living in Geneva, Switzerland, for a year. Rosamond graduated from Radcliffe and has done extensive graduate work there and, as a Fulbright scholar, in Vienna, Austria. Alfred completed his Ph.D. studies in Physics at M.I.T. and has accepted a post-doctoral fellowship at the European Council for Nuclear Research in Geneva. Sheldon Salzman married Gail Wisser, who was the first woman to graduate from the University of Maryland with a degree in Aeronautical Engineering. Sheldon, after graduating, served as a Naval officer with the Bureau of Aeronautics in Washington and received his master's degree from Tech.

Following that he was a researcher for the Royal Institute of Technology in Stockholm, Sweden, and is now a staff engineer with the Chrysler Corporation in Detroit. In August, Bruce Beckley and Sharon Bristol were married in Meriden, Conn. She is a graduate of Connecticut Teachers College, and Bruce is presently an engineer with the Connecticut Light and Power Co., in Norwalk.

Last month I mentioned Mandy got a letter from Mark Schupack, which he passed on to me. Following graduation Mark and Helaine tromped off to Pennsylvania, where he worked for Sylvania as an industrial engineer. After that brother Mark spent two "glorious" years with the Air Force—six months at Scott Air Force base near St. Louis and one and one-half years in and around Japan. As Mark puts it: "While in the service, my wife and I decided that the kind of life we really wanted was the academic one, i.e., teaching and doing research at a university." Consequently, he is working on his Ph.D. in Economics at Princeton University. This June he received his master's degree and successfully passed his written and oral exams. In April their second child, a daughter, was born. Mark had another paragraph, which I'll include:

"News about other people: We saw Jack Friedenthal and his wife last summer while they were visiting relatives. They were in from Santa Monica, Calif., where Jack is working for Ramo-Woolridge. Incidentally Jack's wife and my wife were close friends, or roommates, or something, while in college together. We ate dinner in New York last January with Fred and Ellie Zwerling. Fred and his several brothers are running a contracting firm on Long Island specializing in installing the sheet metal ductwork for air conditioning systems. They have received the contract for several of the new big office buildings going up on 3d Avenue in New York. Bob Gellert was married last Labor Day and spent a couple of months honeymooning in Europe. He and his wife are living in Manhattan now while he is working in his father's investment banking house. Bob Piper and Joe Wysocki are both here in Princeton, Bob working at the University's Matterhorn Project and Joe an engineer for the Radio Corporation of America research laboratories here. I know no further details since I have seen them each just once briefly. Steve Kliment received his master's degree in Architecture here last January and, according to one of his classmates, is now working in a New York architecture office. I spent all my two years in the Air Force with Bill Mitchell, both at Scott and in Japan. The last time I saw him was when we got off the boat in San Francisco on the way home. He was headed for Los Angeles to look for a job in chemical engineering."

I am sorry that this article has to end with such a sad note, but news was just received of the death of Frank Tudino. Frank entered the Air Force following graduation, and at the time of his death in August was stationed at Hanscom Air Force Base in Bedford. At the same time he was working on a master's degree in Aeronautical Engineering at Tech, having completed about half of the course. Frank was buried at Arlington National Cemetery in Washington and is survived by his wife, Janet. I'm sure that all of us who remember Frank are sorry to hear of the unfortunate circumstances and join hands in extending our warmest sympathy to his wife

and parents.—MARTIN WOHL, *Secretary*, 100 Memorial Drive, Apartment 8-18C, Cambridge 42, Mass.

1954

Merry Christmas to one and all! And that almost completes this month's news; recent mail has been painfully barren of Class gossip. Take a minute off right now and send a few words of encouragement and news to your weary Secretary, who will be most appreciative. Then, with a clear conscience, you may peruse what few items are available this issue.

Art Jacob writes from Washington, D. C., where he is dividing his time between the Patent Office and George Washington University, that his "humdrum existence remains the same as usual." He also repeats a rather persistent rumor according to which Dick Hayes is now back at Tech, using Air Force help to obtain a master's degree. Sam Losh reports from California that he is still with Ramo-Wooldridge, and is attending the University of California at Los Angeles at night. Sam says that John Margulis, after getting his master's degree at Harvard Business School, has moved to California, where he started working for Hughes Aircraft and changed his signature to Reed Margulis. Sam and Reed share an apartment in Inglewood, Calif. John Preschlack also received a master's degree from Harvard Business School, and reports that he is now toiling for McKinsey and Company, Inc., management consultants in New York. Other members of the Class who received degrees of master in business administration from Harvard this year include George Dormer, Alex Dreyfoos, Art Haines, Dave Springsteen, and Al Zappala. Hossein Nasr received a doctor's degree, category unknown, from Harvard in June. And while we're on the subject of advanced degrees, we might mention that Guerdon Coombs acquired his M.D. from the University of Rochester, Bill Browder obtained a Ph.D. in Mathematics from Princeton, and Jim Klapmeier received a master of business administration degree from the University of Minnesota, all this past June.

Turning to the social side of the news, we are happy to report the nuptials of Pasquale DiNapoli and Yvonne Imperato in Brooklyn on August 31. A week earlier, on August 23, Bob Schultz married Suzanne Bergeron at Champagne, Ill. Paul Drouilhet and his wife Betty are the proud parents of Stephen Moffatt Drouilhet, who was born July 15.

Among awards and honors received by members of the Class recently was the Massachusetts Medical Society's annual award for "diligent work and qualities serving to designate a good physician," which was presented to Jerry Waye in May. Jerry is completing his course in medicine at Boston University and Mt. Sinai Hospital in New York. Paul Gray received a \$500 award for excellence in teaching during Parents' Week End at Tech in May.

On other fronts, we have it on good authority that Jim Sunderland is now an assistant professor at the Northwestern University Technological Institute. Charlie Mraz is project engineer-in-the-field for the Air Force's long range missile, the Titan. Mel Mattson has been helping launch Redstone missiles at Cape Canaveral, Fla. And Al Murphy has been running around delivering

papers on applied meteorology, especially one entitled "Meteorology and Heating Load Requirements," which was read at the second National Conference on Applied Meteorology held at Ann Arbor, Mich., in September. Which brings us to the end of the news supply. We'll try again next month.—EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1955

Greetings—of the moment, of the season, and for the new year! I seem only to misinform you about the peripatetic Class Secretary. Just after I had written of Denny's proposed far eastern vacation, I received a card from him from Brussels! Seems a change of assignment took him briefly to the Azores, and he's now traveling in Europe and Israel and will be back at Bedford Air Force base in a couple of weeks.

Other faithful correspondents from whom news has come are the Nasatirs and the Dave Brookses. The latter are now in Boulder, Colo., where Dave has begun work on his Ph.D. He is also teaching and expresses enthusiasm at the prospects of experiences in a genuine university, the University of Colorado, after M.I.T. and California Institute of Technology! After a full summer Dave Nasatir is back at the jobs of teaching and learning at Berkeley. He and Mar continue to write of a remarkable life—everything from teaching Weimaraners manners to madrigal and recorder groups. Sounds like fun.

Ben O'Brien seems to have been in on the fun in the initial moon rocket launching. At the time he was working as a civilian staff engineer at the huge Jodrell Bank Radio Telescope of the University of Manchester, England, an important tracking station of the satellites and the moon rockets. By now Ben should be enrolled at the University of Munich for the fall term if subsequent moon rockets haven't altered his plans. In another center of world attention recently, Lebanon, was Charlie Gellar. Charlie, who went to Lebanon from Germany, where he had been serving with the Army, felt the local snakes and insects a greater hazard than being shot at! Jud Ball and his wife, the former Joyce Stearns of Auburndale, are living in Philadelphia after their recent marriage. And Gerry and Nancy Levine have settled in Brighton after a honeymoon in the West Indies, Puerto Rico, and Jamaica. Nancy, the former Nancy Lourie of Brookline, is an alumna of the Boston University School of Education. Ely Lurin is now working on search radar for Sperry Gyroscope Company after receiving his master's degree from the University of Pennsylvania.

It was good to hear that the Class of 1955 was not missing completely from this year's Alumni Day. Jerry Schooler and his wife and Bob Allan represented us—and had a good time doing so, I trust! I must confess my disappointment upon learning from the annual report of the Alumni Fund that our "audience" comprises only 29 per cent of the Class. And the worst part of it is that I have no way of reaching the other 71 per cent to back Glenn Jackson in his appeal and to attempt to increase the Review circulation. So those of you who do read The Review and support the Fund, put in a good word for us with your less fortunate (?) classmates! We'll appreciate it!—MRS. J. H.

VENARDE (Dell Lanier), *Secretary*, 107 Mullin Road, Wilmington 3, Del. FIRST LIEUTENANT LABAN DENNIS SHAPIRO, *Assistant Secretary*, CR21, GRD AFCRC, Bedford, Mass.

1956

Greetings for the holiday season. Again this year let us include Tech on our gift list and remind your friends who are not reading The Review. This past year there was a four per cent improvement in the number of donors, but we were barely able to keep pace with those around us. You, a faithful one who reads The Review, can help by contacting a friend who mooches your copy.

Editorial for the month: engineering and science as a profession, the apprentice years. Upon graduation many of us have ventured to practice the theory we learned. In this new and different life problems had to be approached from other than the scientific point of view, although problem solving is a help. An incubation period is necessary in which we encounter all or part of the following: (1) narrowing of the concept of immediate work and difficulty of maintaining contact with other possible fields; (2) acceptance that it is not possible to be a leader at first but we must have guidance of others; (3) personnel relationships can be sticky and must be handled gently because newcomers are the ones on trial; (4) it is sometimes necessary to change goals and fields but it will do no good to try to make the best of a bad thing; (5) in the apprentice years extra effort is needed to climb the first rungs of the ladder, and a slacking period can result in early stagnation; (6) careful planning and often further education is necessary to progress in professions; (7) the realization grows that a vigorous self-education program is necessary to maintain competence. In summation, the theory that we learned is only the beginning, and the apprentice years are perhaps the most critical determinant of the future.

The '56 representation at Alumni Day, 1958, was sparse, with only the following registered: Nereo and Mrs. Agostinelli, Lloyd Brace, John Coleman, Morrin Hazel, David Quigley, Moorfield and Mrs. Storey, Fred Thellman.

Adding to the list of those who are furthering their formal education: Avraham Berkovits attended Virginia Polytechnic Institute last summer; Philip Bromberg is in the Department of Chemistry at California Institute of Technology; Stephen Conviser was awarded a master's in Business Administration from Harvard Business in June; Emilie Drew, who was married in August, received her master's from Tech in June; Peter Dyke was awarded a master's in Business Administration by Rutgers in June; Edward Effros received his master's from Harvard in June; Walter Farrell is at the School of Medicine of Western Reserve; Paul Levine received a renewal of his Hughes fellowship at Cai. Tech; Francis Lombard was awarded an M.S. in Physics by Rochester in June; David Mellen is back at Tech this year; and Richard Peskin received his M.S. from Princeton in June.

Representing our group in the 1958-59 National Science Foundation fellowship awards are: Robert Kaiser, Charles Kruger (who studied in Holland in 1956-57), Richard Miller, and Arthur Peskoff.

Names in the news from the military are: Arnold Breeden, who is stationed on Guam with the Air Force; Joseph Carleton, who is an ensign at the Public Works Office of the Naval Air Station on North Island at San Diego; Joseph Goodwill, who returned to Fort Benning, Ga., from Korea and expects to return to civilian life this month; David Seidel, who is in the Army at White Sands Proving Ground, N.M.; Frederick Worsh, who is supply officer at Army Engineers Test Unit, Fort Belvoir; Wallace Mack, who attended University of New Hampshire after Tech and was selected airman of the month in his Special Weapons Squadron last January; and Robert Regut, who was cadet sergeant in his last year at West Point and elected to serve in the Air Force upon graduation in June. It is heartening to see the "most wanted" widening their scope of endeavor.

Generosity recognition for the year goes to Mrs. Lammot du Pont for her added contribution to the David F. du Pont Athletic Center funds. Here's to a real blazer of a new year. Cheerio, lads.—**BRUCE B. BREDEHOFF**, *Secretary*, 1528 Dial Court, Springfield, Ill. **M. PHILIP BRYDEN**, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, P.Q., Canada.

1956G

Many of our classmates who culminated their years at M.I.T. by receiving the doctorate degree in science or philosophy are settled in challenging research positions in industrial and academic society. George Mortimer is in the Research Department of Monsanto Chemical Co., at Texas City, Texas. A colleague in chemistry, Leonard Newman, is living in the Long Island suburb of Upton, N. Y., in the vicinity of Brookhaven National Laboratory where he has his office. Dr. Jay Last has embarked upon a career with Fairchild Semiconductor Corp. in Palo Alto, Calif. Jay's Ph.D. is in Physics. Larry Frishkopf, a biophysics scientist, is presently on the staff of the Rockefeller Medical Foundation in New York. Dr. Isaac Minkoff has returned to Haifa, Israel. Across the seas in Norway, Kurt Becker's present address is 12 Elisenbergveien, Oslo. He was awarded a doctor of science degree in Mechanical Engineering with our Class. Bernard Borie, from the M.I.T. Physics Department, is now at Oak Ridge. Dr. Pierre Brian has remained on the M.I.T. staff.

Announcement has been made of the engagement of a classmate, Robert Coughlin '55G, to Miss Elizabeth Jane Keagy of Chestnut Hill. Bob was a graduate of Harvard Class of '50 and received an S.M. in City Planning at the Institute. A Civil Engineering Alumnus, Captain Robert Wilson, U.S. Army, has been stationed in Washington, D.C. Bruce D. Phillips has moved to 15 Commonwealth Avenue, Buffalo, N. Y. Merry Christmas and best wishes for the New Year.—Lieutenant (j.g.) **CHARLES T. FREEDMAN**, *Secretary*, SWULANT, U.S. Naval Air Station, Norfolk, Va.

1957

Merry Christmas! We still have a hangover from the annual M.I.T. Club of New York beer party at Rupert's Brewery. Guess who's taking over the Athletic Department at Tech? Bill Salmon was appointed freshman hockey coach while Tom Thomas was appointed freshman squash coach. Bill played on the M.I.T. hockey teams for two years; he is now a graduate-student at Tech. Tom captained the squash team as an undergraduate and is currently a research assistant in the School of Industrial Management. Sink or swim department: Jim Emerson is currently an engineer in the Underwater Armament Engineering Department of the Surface Armament Division, Sperry Gyroscope. Jim was formerly with the Air Force Cambridge Research Center. Also with Sperry in the same division but as an inertial guidance engineer is Irving Ojalvo. Irv was formerly an instructor at New York University.

Larry Lowe has rejoined Proctor and Gamble in the Development Department of their Cincinnati Technical Packaging Division, having tired of playing lieutenant in the Chemical Corps. Lieutenant Michael Tym was in Boston recently after a Mediterranean cruise aboard the *U.S.S. Boston*. Don MacLellan of Lincoln Laboratory spoke recently before the national symposium on Extended Range and Space Communications on the subject of "Aspects of Using Space Satellites as Passive Reflectors for Communication Purposes." Len Platt writes that he was married to Barbara Bellinger last January and is currently working for the Engineering and Construction Department of the California Texas Oil Co. in New York City. Bruce Wedlock was married to Mary Ann Johnson, a Simmons girl, last August in Stamford, Conn., where John

Penhune served as one of Bruce's ushers. The Wedlocks have settled in Brookline and Bruce is working on his Ph.D. at Tech. Jim Regan was wed to Marie Donahue, a graduate of Emmanuel College, last August in Brookline. After a Canadian honeymoon trip, Jim returned to work at Lincoln Laboratory. Last August Morton Rosenstein took as his bride Barbara Helen Sparks, a Brandeis alumna, from Chestnut Hill. Married last September were John Roberts and Louise Stover of Ardsley-on-Hudson, N. Y. Louise graduated from Wellesley. The D.K.E.'s turned out in force for this event with George Bohlig and Frank Mitchell serving as John's ushers. Other Tech men acting as ushers were Don Smith and Bob Dirks. The Roberts have settled in Charlottesville, Va., where John is attending the law school of the University of Virginia.

Married last August were Michael Mintz and Enid Baker of Brookline. Enid is an alumna of Cazenovia Junior College. The Mintzes honeymooned in Florida. Jim Slagle wed Francis Galassi this November 29 (so the August engagement announcement informs me). Frances is in her senior year at Boston College, while Jim is working on his Ph.D. in Mathematics at M.I.T. and is a staff associate at Lincoln Laboratory. Paul Wood joined Datamatic upon graduation, then the Quartermaster Corps in June, 1958. Ensign Ed Atkinson is a Navy pilot. Trenchard More was wed to Katharine Grinnell Biddle of Oyster Bay last August. Katharine is a graduate of Vassar. Trenchard is working for his doctorate and teaching at M.I.T. Allen Burgess married Ann Wolbert, a Boston University graduate, from Auburndale. After a honeymoon trip in the Poconos, the Burgesses settled in Havre de Grace, Md., where Allen is an Air Force lieutenant. Henry Pahl wed Barbara Ratcliffe of Radcliffe last August in a Cambridge wedding. The Pahls honeymooned in Canada. Joe Vertin took as his bride Jean Callahan, a graduate of the Katharine Gibbs School and a native of Swampscott, in a September wedding. Joe is presently attending the University of Minnesota Graduate School.

This editor enjoys reporting weddings but would equally like to report a birth now and then. How about dropping me a line every so often when you have a child? —**ALAN M. MAY**, *Secretary*, 55 East End Avenue, New York 28, N. Y. **MARTY FORSBERG**, *Assistant Secretary*, 383 Harvard Street, Cambridge 40, Mass.

Mr. X: Where are you going?

Mr. Y: To DETROIT, MICHIGAN

Mr. X: Why?

Mr. Y: To attend the M. I. T. REGIONAL CONFERENCE, of course

Mr. X: When is it?

Mr. Y: SATURDAY, JANUARY 31, 1959

Mr. X: What's happening there?

Mr. Y: The day-long program will feature speakers from M.I.T. and luncheon, panel discussion, reception, and dinner.

Mr. X: Who's talking?

Mr. Y: DR. GEORGE R. HARRISON, Dean of the School of Science

DR. THEOS J. THOMPSON, Professor of Nuclear Engineering and director of design and construction, M.I.T. Nuclear Reactor

DR. H. GUYFORD STEVER, Professor of Aeronautical Engineering

DR. CARL F. J. OVERHAGE, Director of Lincoln Laboratory

DR. JOHN E. BURCHARD'23, Dean of the School of Humanities and Social Studies

DR. J. A. STRATTON'23, Acting President of the Institute

Mr. X: Sounds great! Who's attending?

Mr. Y: M.I.T. Alumni and other interested persons

Mr. X: Who can I contact for details and to sign up?

Mr. Y: That would be Conference Chairman THOMAS F. MORROW'35, Vice-president, Chrysler Corp., 341 Massachusetts Avenue, Detroit 31, Michigan.

Mr. X: Guess I'll go, too. See you there!

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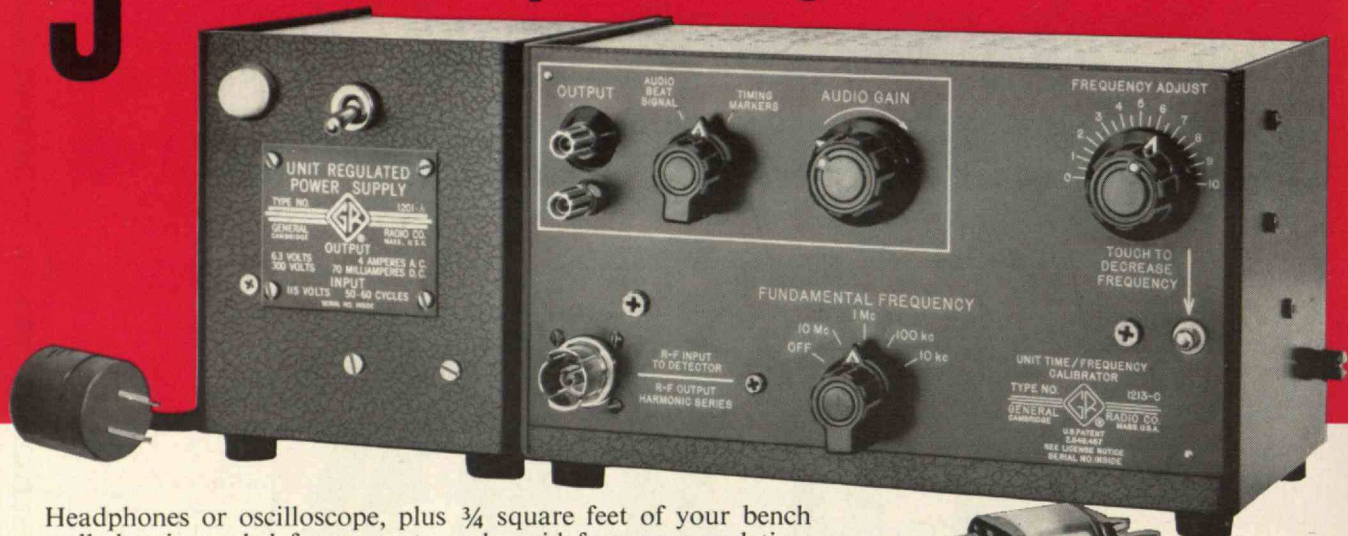
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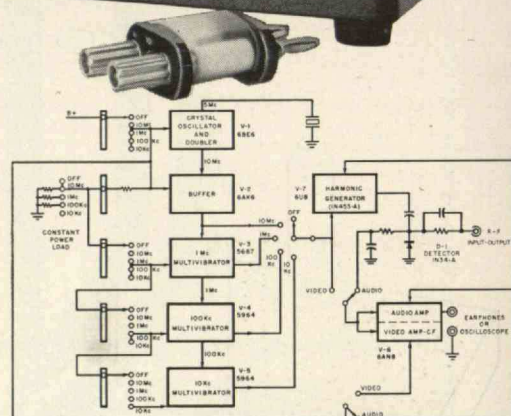
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